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ABSTRACT

In 1951, 240 high school students with great academic promise interrupted their high school careers after completion of the 10th grade in order to enter college through an early admissions program. This document presents a follow-up study of these students, 213 of whom were males, and 252 other students who entered college in the conventional manner at the same time. The major objectives of the study were: (1) to examine the long-range effects of academic acceleration; and (2) to evaluate a large scale innovation of this type in education. The general conclusion concerning the effects of acceleration on students is that these students had accepted the opportunity offered by early admission to college and capitalized on it to accelerate the development of careers with minimum observable ill-effects both during and after college. As a large scale innovation in education, the Early Admission Program lacked 3 fundamental characteristics: a clear direction; a well-conceived research design; and a sound public relations program. (HS)

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FINAL REPORT

PROJECT NO. BR-5-0834 (CRP 1570)

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FINAL REPORT

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MALE STUDENT SUCCESS IN THE COLLEGIATE EARLY ADMISSION EXPERIMENT

James W. Miller

University of Hawaii

Honolulu, Hawaii

1968

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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James W. Miller

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Abstract

Male Student Success
In The Collegiate Early Admission Experiment

In 1951, 420 students of high academic promise interrupted their high school educations at the end of the tenth grade and entered eleven colleges and universities as freshmen. The students were the first of four groups in the Early Admission Program which was financed by the Fund for the Advancement of Education of the Ford Foundation between 1951 and 1958. By 1954, Morehouse had become a participating college and 1350 students had entered twelve colleges and universities early under the Program. The follow-up study, begun in 1962, was concerned with five of the twelve colleges and universities in the Program. It traced the young men who, in 1951, had entered Columbia University, the University of Chicago, Oberlin College, the University of Wisconsin, and Yale University.

The major objectives of the study were (1) to examine the long-range effects of academic acceleration and (2) to evaluate a large scale innovation in education.

Data for the follow-up study came from three sources: (1) The questionnaires used in 1953 and in 1955 when the Program was under-way, (2) the academic transcripts of the young men of both the control and the experimental groups, and (3) the follow-up questionnaire.

In the Early Admission Program, each college had selected its experimental group using its own criteria. In general, the selection was based on high school records, scores on the Scholastic high school principals, and personal interviews. Each college also

selected a group of young men of comparable ability who had entered college in the conventional manner for comparison purposes. In 1951, 240 experimental students and 252 control students had attended the five colleges and universities in the follow-up study. Of these students, 213 of the experimental group and 197 of the control group were men.

The critical issue in the Early Admission Program was academic acceleration between school and college. The issue involved the search for procedures for shortening the extended training period of the academically talented student in the United States. Among the procedures currently available for articulating the high school and the college, academic acceleration has been the least acceptable among high school educators. Academic acceleration, the high school educators have claimed, is unwise, unsound and unnecessary.

Other programs of academic acceleration between school and college have been undertaken. Three such programs were the experiments at the University of Chicago, the University of Illinois, and the University of Louisville. None of these programs were able to quiet the objections of the high school educators to academic acceleration because none of the programs had provided conclusive evidence about satisfactory emotional adjustments of the accelerated students in college.

Extensive data were already available on the performance and adjustments of the experimental group to college when the follow-up study began. The follow-up study sought answers to the question, "What happened to the early admittees after college?" Approximately 65% of both groups responded to the follow-up questionnaire.

Five null hypotheses were identified and tested. These hypotheses, which were tested by extensive use of Chi-squares, were:

1. There were no significant differences between the control group and the experimental group in socioeconomic backgrounds.
2. There were no significant differences between the control group and the experimental group in undergraduate performance.
3. There were no significant differences between the control group and the experimental group in attainment of choices of and entrances into graduate schools.
4. There were no significant differences between the control group and the experimental group in occupational attainments and activities.
5. There were no significant differences between the control group and the experimental group in post-college socioeconomic activities.

The summary of findings of the follow-up study showed that the second null hypothesis could not be rejected byt all the other four were rejected. The rejection of the first null hypothesis was based on observed significant differences between the two groups in occupations of fathers, educations of fathers, religious affiliations of parents, and type of high school last attended. The rejection of the third null hypothesis was based on observed significant differences between the two groups in entrance into graduate schools. The rejection of the fourth null hypothesis was based on observed significant differences in the paths taken in occupational activities by the two groups. The fifth null hypothesis was rejected because the groups exhibited significantly different socioeconomic statuses and had reproduced the socioeconomic status of their parents.

The general conclusion which evolved from the pattern of the rejections of the null hypothesis was that experimental group had accepted the opportunity offered by early admission to college and capitalized on it to accelerate the development of careers with minimum observable ill-effects both during and after college.

As a large scale innovation in education, the Early Admission Program lacked three fundamental characteristics. It lacked a clear direction; it lacked a well-conceived research design, and it lacked a sound public relations program. All three shortcomings might have been overlooked if the heuristic properties of the Program had been protected. Unfortunately, the Program was also lacking in safeguards of the heuristic properties.

In spite of the shortcomings of the Program with respect to the research characteristics, the data gathered provide conclusive evidence that the experimental group had gained two years over its chronological peer group with no observable ill-effects in post-college graduate activities, occupational activities, and socioeconomic activities.

Chapter 1

Introduction

In 1951, 420 students of high academic promise interrupted their high school educations at the end of the tenth grade and entered eleven colleges and universities as freshmen. The students were the first of four groups in the Early Admission Program which was financed by the Fund for the Advancement of Education of the Ford Foundation between 1951 and 1958. By 1954, 1350 students had entered college early under the Program. The follow-up study of male student success in the Program is concerned with five of the twelve colleges and universities. The follow-up study, begun in 1962, traced the young men who, in 1951, had entered Columbia University, the University of Chicago, Oberlin College, the University of Wisconsin, and Yale University.

The two major objectives of the study were (1) to examine the long-range effects of academic acceleration and (2) to evaluate a large scale educational innovation. Of the two objectives, the second is currently of greater interest than the first primarily because academic acceleration seems no longer to be a high priority issue in education.

The final reports and discussions already published about the Early Admission Program refer to the early admittees as Scholars. In the follow-up study, they are called the experimental group. The regular superior college students whom the colleges had selected for comparison purposes were called Comparisons. In the follow-up study, they are called the control group. In general, the Comparisons or the control group were two years older than the Scholars or the experimental group, Chapter 6 presents the follow-up data and the interpretations of the data under sub-headings of pre-college information, undergraduate information, graduate information, occupational information, and socio-economic information.

Chapter 7 reviews the conclusions of earlier reports and critiques, and compares them with the findings of the follow-up study.

Chapter 2

Academic Acceleration—A Background

Academic acceleration is one approach toward bringing together different sections of the educational system. The approach is an example of educational articulation, the fitting together into a functioning whole the distinct parts of the educational sequence from kindergarten to college without the loss of identity of each of the parts. In the present discussion, articulation programs are limited to programs which fit together the high schools and the colleges. In addition to academic acceleration, other forms of articulation between high schools and colleges are enrichment programs and advanced placement programs.

Enrichment programs are characterized by studies in depth or studies in supplementary or expanded topics. Such programs often provide intellectual stimulation for students because the programs can be related to existing interests of the students. Enrichment programs, however, do not shorten the period of time that the students must spend in high schools and in colleges. Examples of enrichment programs are the physics course of the Physical Science Study Committee (PSSC), the chemistry courses of the American Chemical Society (ACS), and the biological sciences courses of the American Institute of Biological Sciences (AIBS) (11, 51, 53, 79, 80, 81, 100, 101, 113).

Advanced placement programs are collegiate quality programs intended primarily for high school students of high academic promise. When successfully completed by students through satisfactory performances in subject area tests, advanced placement programs permit the students to waive prerequisites for certain classes in colleges. For example, students who are successful in advanced placement mathematics ate permitted to enter other higher level classes in mathematics in their first years in colleges. In some instances, students who have successfully completed several advanced placement courses may enter colleges with advanced standing; that is, as second semester freshmen or as first semester sophomores.

Although advanced placement does not typically permit students to shorten the time they spend in high schools and in colleges, certain students who qualify for advanced standing do shorten the time they spend in colleges. Generally, however, students with advanced placement credits spend the conventional four years in volleges but are able to encorporate graduate level studies into their undergraduate programs. Examples of advanced placement programs are the program of the University of Buffalo (5, 70, 71, 72, 85, 120) and the Advanced Placement program of the College Entrance Examination Board (24, 25, 26, 28, 32, 38, 57, 73, 94, 118, 121).

Academic acceleration between schools and colleges, because it shortens the program of the schools or of the colleges may not be a genuine articulation effort. It attempts to modify the identity of at least one of two parts it should be putting together. Academic acceleration is classed as an articulation program in the present discussion because it operates between two distinct parts of the educational sequence. Under academic acceleration, students of high academic promise are permitted to omit a year or more of schooling to enter a higher level. When acceleration occurs between schools and colleges, students often interrupt their high school educations and enter college early. Examples of academic acceleration are the program of the University of Chicago (12, 17, 20, 68, 116) and the Early Admission Program of the Fund for the Advancement of Education (4, 41, 42, 57, 58, 76).

Academic acceleration between schools and colleges or early admissions into colleges are solutions to problesm which accompained the growth of higher education in the United States. The growth of the American university led to the extension of the training period for students. The extended time for education by the universities was partly attributable to the attempt by American universities to merge the ideals of scholarship and research of the German university with the ideals of scholarship and research of the German university with the ideals of liberal studies of the English college (39). Officials of American universities knew that implementing one part alone could take the entire four years staudents customarily spent in colleges. The merging of the two ideals brought about the severe competition for proportions of the collegiate programs by advocates of both the liberal arts and specialized programs.

The competition for the time of the students was aggravated by the increased stature and desirability of the degree of doctor of philosophy in the tradition of the German university because it furthered lengthened the educational program from high school, through college and to graduate schools.

Between 1880 and 1910, schools and colleges participated in large scale efforts to improve the transition program of students from school to college. Prominent among these efforts were the College Entrance Examination Board and the curriculum conference of the National Education Association (NEA) (93). These efforts did not reduce the extended training period from high school to graduate school, but did eliminate some duplication of studies between schools and colleges. These transition efforts provided some degree of similarity in academic backgrounds of students entering colleges from different schools in different parts of the country.

Academic acceleration seemed a dormant issue until the 1930's. Although other programs preceded it, the program at the University of Chicago, in 1937, renewed academic acceleration as a critical issue (12, 20). Shortly thereafter, under the impetus of the severe manpower requirements of the nation during World War II (1941-45), other programs appeared. Some of these programs were intended to keep the college enrollment up while others were intended to maintain the flow of talent through the universities. The proliferation of such programs prompted Pressey (96) to convene a three-day conference at Ohio State University in the summer of 1942 to map plans for coordinating and controll the efforts of academic acceleration between schools and colleges.

Pressey sought plans for deriving the greatest knowledge about academic acceleration from the programs already underway. Among those present at the conference were Jones, whose work at Buffalo in the 1930's had anticipated the Advanced Placement Program of the College Entrance Examination Board by twenty years, and Elicker, who was already executive secretary of the National Association of Secondary School Principals and who was to co-author a scathing criticism of the Early Admission Program in 1951.

In the fall of 1942, the Educational Policies Commission of the National Education Association adopted the following resolution on academic acceleration:

> We urge that, during the war emergency, selected students who have achieved senior standing in high school and who will, in the judgement of high school and college authorities, profit from a year's college education before they reach selective service age, be admitted to college and, at the end of the successful completion of their freshmen year, be granted a diploma of graduation by the high school and full credit for a year's work towards the fullfillment of the requirements for the Bachelor's degree or as preparation for advanced professional education (40, 89).

Within a few days, the resolution was under attack by educators at both the high school and the college levels (59, 119). Most of the criticisms had been anticipated by the Educational Policies Commission but the resolution had been adopted inspite of the arguments or rather in light of the arguments.

Edmonson, in clarifying the position of the Commission, had outlined the negative aspects of the resolution as seen by the Commission (40). The resolution could be interpreted as undermining the value of the last year of high schools; it might imply that three years of a four-year high school program would not result in loss in educational value and, thereby, encourage students to leave high school early. It implied that the colleges were better prepared than the high schools to offer appropriate instruction to 17-year-old students. The high schools, on the other hand, felt that the last year of high school was more valuable to the students than the first year in a conventional college. Among the anticipated accusations, the Commission foresaw the claim that the resolution helped the colleges with their lagging enrollments rather than the young students.

Since 1942, the character of the arguments for and against academic acceleration between schools and colleges has been the serious consequences of academic acceleration upon the emotional and academic well-being of the students. Furthermore, conflicting interests and continued suspicions have resulted in overt arguments not always being the real issues. For example, the high schools have interpreted the actions of the colleges toward early admission as a usurpation of institutionalized prerogatives, but they seemed more incensed about the criticisms on the adequacies of the high school programs for the academically talented student (97).

To summarize, academic acceleration is one of three forms of articulation of high schools and colleges. The issue of procedures for shortening the extended training period of academically talented students in the United States has become entagled in the ploitical actions of the high schools and the colleges. Enrichment programs and advanced placement programs have provided solutions acceptable to high schools and colleges but they fail to meet the long-range problem of the students who will pursue graduate and professional studies.

Three experimental programs are reviewed in the following sections to provide a context for questions about academic acceleration. They were independent undertakings at the University of Chicago, the University of Louisville and the University of Illinois.

The Experiment at the University of Chicago, 1937-42

The University of Chicago was a pioneer in adopting the early admission principle in intent and in practice. In 1930, the faculty at Chicago had searched for a new undergraduate plan which would maintain a balance between the liberal arts and specialization. When it assessed the balance, the faculty at Chicago discovered that the requirements and academic demands of specialization tended to compress the liberal arts into a smaller portion of the collegiate program. By 1937, the faculty at Chicago were convinced that the two-year program of liberal studies was inadequate. They were forced to look for additional time in the years students normally spent in the high schools.

The faculty at Chicago reasoned that, if the last two years of the secondary schools and the first two years of college could be combined, then a four-year liberal arts program was possible. They developed such a program by first creating a kindergarten to grade 10 plan in the Chicago campus school. The merger of grades 11 and 12 with the first two years of college became the four-year college of the University of Chicago. In effect, the plan permitted students to enter the undergraduate college two years before they had graduated from high school.

In 1941, Benner (12) published a final report of the experiment. Table 2.1 summarizes the participation of students in the experiment. Benner explained that the two sharp drops in enrollment were not functions of the program but of two other effects. First, the number of participants was largely a function of the number of students of the campus school who were ready to undertake academic acceleration and the Chicago program. The number of students fluctuated over the period of the experiment. Second, the sharp drops at the end of the second year for the first two groups were caused by students leaving the program to enter conventional four-year colleges and universities elsewhere in the country. The students were leaving Chicago at what would have been the end of their senior years in high schools.

Because so many students left after two years in the program, Hutchins (51) observed that it was impossible to develop a liberal arts program without presenting the degree of bachelor of arts at the end of the program. The faculty at Chicago concurred and, in 1942, Chicago began conferring the degree of bachelor of arts at the end of its four-year program.

During the program, Chicago put together for each student a dossier which contained a syllabus for each course pursued, a fairly complete case history of educational guidance and personnel records, a copy of each of the seven required six-hour examinations, and the actual examination papers the students wrote under supervision. The dossier indicated the success of each student who entered the program, but because it used the clinical approach, it could not help provide generalizations about the program itself.

Table 2.01

The University of Chicago Experiment

Number of Participants by Years

(12, p. 212)

Year Entered	Sex	1937-38	1938-39	1939-40	1940-41
1937	M	48	44	32	29
	F	70	70	27	24
1938	M	--	71	69	37
	F	--	61	61	34
1939	M	--	--	51	50
	F	--	--	55	54

In 1952, ten years after the critical reactions (102, 114) to the granting of the degree of bachelor of arts by the University of Chicago at the end of its four-year program of liberal studies, Chicago accepted the challenge to compare the performances of its four-year graduates to graduates of other conventional colleges on a nationally recognised examination, the Graduate Record Examination. With only one hundred students out of a possible three hundred taking the examinations, Chicago was able to show that its graduates were comparable to graduates of other colleges. By the time Chicago had decided to make the comparison, most of its graduates were out of reach; hence, the low number of subjects.

The Experiment at the University of Louisville, 1934

The experiment at Louisville (37) provided an earlier intellectual challenge for the superior student by placing him in a college one year earlier than his classmates. To proceed with the experiment, Louisville sought and received the approval of the Southern Association of Colleges and Secondary Schools (SACSS). The SACSS, in approving the Louisville experiment, limited it to no more than 25 entering students per year.

Detchen (37) reported that students who were accepted into the experiment had to stand above the fiftieth percentile for regular freshmen at Louisville on the Psychological Examination of the American Council on Education, the Nelson-Denny Reading Test, and the Cooperative English Test in Usage. In addition, students had to equal or surpass the achievement levels of students in high schools of the city of Louisville in the Sones-Harry High School Achievement Test. Detchen reported further that the recommendations of the high school principals were the important initial qualifiers for students and that few of the choices of the principals were rejected.

Officials at Louisville interviewed both the students and their parents before they made the final selection of the experimental group. Final decisions were made only after Louisville officials were convinced that the students were mature enough to undertake the program. The stringent requirements for admission and the initial suspicions of parents toward the experiment contributed to the low participation of only 35 students in the program from 1934 to 1938 (37).

Each student in the experiment was matched with another student, a control student, who was one year older but similar in sex and in standings in placement tests. In college, the experimental students were treated in every respect like all other students. To insure the similar treatment, the experimental students remained unidentified to the teaching faculty.

Evaluations were based upon grades earned during the academic years; on ratings on the National Sophomore Test; on participation in extracurricular activities; on opinions of parents; on personalities of the students, and on student opinions. The results, in general, showed no significant differences between the experimental and control groups on the various evaluative criteria. The early admittees and their parents were favorably impressed by the program.

Among the strengths of the Louisville experiment were its public relations program and its prime concern for the best interest of the applicants and students in the program. Louisville was so successful in its public relations program that at the end of the experiment, Louisville received enthusiastic praise from SACSS (37). During the selection process of the experiment, Louisville acted in the best interest of the applicants. Although its experiment suffered from low participation, Louisville discouraged several girls of high ability because the girls aspired to completing their undergraduate studies at outstanding colleges for women, particularly among the colleges on the Atlantic seaboard. The girls were discouraged from participating in the program because the reactions of such colleges toward the experiment were unknown.

The Experiment at the University of Illinois, 1943

Berg and Larsen (14) reported on the early admission experiment carried out at the University of Illinois in 1943. The report was a short-term study and covered the performance of the early admittees for only the first half year in college. Admission to the program was limited to students who had ranked in the upper one-fourth of their high school classes; had completed no fewer than 14 high school units toward regular admissions to college; received the recommendations of their principals and their teachers; had scored above the seventy-fifth percentile on freshmen norms of the College of Agriculture of the University of Illinois in a battery of tests designed to measure aptitude and achievement, and had rated satisfactory on social and emotional maturity as determined by clinical psychologists of the Personnel Bureau of the University of Illinois. Thirty-six students out of 46 applicants made up the experimental group.

The conclusions drawn from the Illinois experiment were tentative and of limited success. The accelerated students were able to surpass the mean level of academic pe4formance of the University of Illinois, but when compared with students in the separate fields of study, the accelerated students had not performed as well. Thirty-one of the 36 experimental students had placed above the eightieth percentile of the overall norms of the University of Illinois, but only 14 had ranked above the same percentile level on the norms of the separate colleges they had entered.

A strength of the Illinois experiment was the extensive collection of pre-experiment data on each of the experimental students. Unfortunately the small sample size and the lack of a control group limited the use of the pre-experiment data.

Illinois had undertaken the experiment after, and perhaps in response to, the outburst of criticisms by officials of high schools and colleges following the release of the statement of acceleration of the Educational Policies Commission of the National Education Association in 1942 (40, 59). Therefore, its public relations program with schools and colleges was questionable at the outset of the experiment.

Some Recurring Questions about Academic Acceleration

Are the superior students who are carefully selected able to perform at superior levels when they are accelerated into colleges? The Illinois experiment, though inconclusive, indicated that the superior students who are accelerated into college do not perform at superior levels. The Louisville and the Chicago experiments indicated that the superior students do perform at superior levels. Unfortunately, the experimental population at Louisville was too small to be conclusive. At Chicago, the students could not be compared with other superior students because Chicago did not use a control group and because the data was predominantly subjective.

That the students accelerated into college might be able to maintain their relative superior standings is supported by another source. In 1958, Wilcox (121), reporting on students admitted to Harvard with advanced standing, showed that half of a group of 31 advanced standing sophomores ranked with the top quartile of regular sophomores at Harvard on a scale predictive of academic success. Since actual performance was not reported, the study by Wilcox, like the experiments at Louisville and Chicago, was only indicative of what superior students might do in college. Therefore, the question about superior students and their performances when they are accelerated into colleges remained largely unanswered.

Are superior students who are carefully selected able to make satisfactory personal adjustments when they are accelerated into colleges? Berg and Larson (14) in reporting on the Illinois experiment claimed that the accelerated students made satisfactory personal adjustments in college but no detailed report on such adjustment was ever published. Chicago was not able to answer the question about personal adjustments among its experimental students. Louisville, on the other hand, was able to compare the adjustments of its early admittees to that of the control group. Based upon the responses of parents and students, Louisville concluded that the experimental group had made satisfactory personal adjustments in college.

Although the evidence indicated some tendency toward satisfactory adjustment by the accelerated students, the evidence was inconclusive. The question about personal adjustments and the criteria upon which the adjustment was assessed remained unanswered.

To what extent were the early admittees representative of a larger population of superior students? No evidence exists that any attempt had been made in any of the three experiments reviewed to sample the larger population of all students of high academic promise when the experimental groups were being formed. In general, the clinical approach of individual cases was used in all three experiments. Therefore, generalizations and extrapolations about early admissions cannot be made with confidence.

How effective were the public relations programs of the early admissions experiments? Of the three experiments, Louisville had the most effective public relations program. Louisville worked through the Southern Association of Colleges and Secondary Schools (SACSS) and was willing to abide by a ceiling of 25 experimental students per year set by the SACSS. In the selection of the experimental group, Louisville relied heavily upon the principals of the high schools. During and after the experiment, Louisville sought the reactions of parents of the accelerated students. By such procedures, Louisville had extended its public relations program to the accrediting association, to schools, and to the parents of the experimental students.

Chicago and Illinois apparently lacked public relations programs. Chicago had evolved a remarkable four-year program but its apparent disdain for the concerns of other colleges and the high schools led to the unwillingness of its critics to see any favorable aspects of the program. In a similar manner, Illinois seemed to have under taken its program in defiance of the critics of the resolution on academic acceleration adopted in 1942 by the Educational Policies Commission (59, 89). The reactions of critics of both programs may have been responsible for the disappearance of the Illinois experiment, a final report of which was never published, and the withering away of interest in the Chicago plan.

In summary, the experiments at Chicago, Louisville and Illinois were inconclusive in their findings about the performance of the accelerated students. The Chicago program was characterized by novel structure; the Louisville experiment by an attempt to control critical variables by the use of experimental and control groups, and the Illinois experiment by extensive pre-experiment data on its accelerated students. The three experiments were similar in one respect; they each examined academic acceleration on a short-range basis. None of the three experiments questioned the academic outcomes beyond the four-year college period. They made no effort to find out whether the superior high school student who was accelerated into college could compete effectively with older superior students in post-college activities.

Chapter 3

The Early Admission Program

In the fall of 1950, and before the end of the first academic semester, many college students and recent high school graduates faced the prospect of being drafted for military service after their first year in college. Some enlisted to fulfill their military commitments, after which they planned to re-enter college. Other students entered college to wait for Congress to enact draft deferment legislation.

College officials were disturbed, however, by the number of students who were leaving the colleges and by the number of students who might not be permitted to continue in college because of the draft. On January 10, 1951, at the 37th Annual Conference of the Association of American Colleges, they voiced their concern that Congress had yet to enact draft deferment legislation (95). They felt that such legislation would provide a greater stability of the college enrollments, and, at the same time, keep the steady flow of academically talented students moving through the colleges. College officials were also disturbed not only by the absence of draft deferment legislation but also by the possibility that Congress might adopt a policy of no-deferment because of the demands and the seriousness of the military situation in Korea at that time. A no-deferment policy, they felt, might have grave consequences on the pool of young leaders and scholars in the nation after the Korean Conflict ended. Accordingly, they proposed and adopted at the 37th Annual Conference a policy urging Congress to defer promising students from military service until after such students had graduated from college.

On January 11, 1951, Assistant Secretary of Defense Anna Rosenberg, testifying before the Senate Preparedness Subcommittee, announced a proposal by Secretary of Defense George C. Marshall advocating the deferment of 75,000 students a year from military service, but not from military training. By this proposal, Marshall had hoped to maintain the steady flow of talent through the colleges and meet the proposal of the colleges. The Marshall proposal on military service was enacted by Congress and signed into law on April 1, 1951.

During the period when the status of the young high school student and graduate was indefinite, four universities approached the Ford Foundation with a plan to ensure that 200 young men of high academic promise would gain the background of a liberal education before they were drafted into the armed services. Under the plan, the 200 young men would enter college at age 16 so that when they reached the draft age of 19, they would have completed two years of studies in the liberal arts. The Fund for the Advancement of Education of the Ford Foundation approved of the plan and on April 22, 1951, announced a grant of $1,200,000 to the University of Wisconsin, the University of Chicago, Columbia University and Yale University to finance the "pre-induction program."

By mid-spring in 1951, the successful counter-offensive of the United Nations in Korea had eased the manpower requirements of the armed services. The enactment of draft deferment legislation by the Congress had eased the concerns of the colleges. With goth pressures reduced, high school educators reacted to the program with serious misgivings. Some educators, upon examining the plan, found marked similarities between the pre-induction program and other efforts at early admission to college which took place during World War II. In 1958, Fels (49) observed that the similarity shoulc have been expected since Hutchins and other former members of the faculty of the University of Chicago directed the Ford Foundation and the Fund for the Advancement of Education which had provided the grant.

What was the Early Admission Program?

The Early Admission Program grew out of the pre-induction plan. Initially, it was an attempt to preserve for and extend to students the values of an integrated liberal education at a time when a protracted national emergency threatened to postpone higher education for high school graduates. Primarily responsible for the program were F. Champion Ward of the University of Chicago, Mark Ingraham of the University of Wisconsin, William C. De Vane of Yale University, and Lawrence H. Chamberlain of Columbia University. The four men contended that a college education wholly postponed until after military service would "impair the quality of our national life, and the personal resources and competences of our young men" (4). Their solution to the problem was the program of early admission because experiences in European schools and limited experiences in America had indicated that "intelligent younger men of normal emotional maturity can profit from work of collegiate rigor and content at the age of 16" (4).

When the Early Admission Program was announced by the Fund, the students who were interested in the plan and had completed or were completing the tenth grade or its equivalent were asked to write to the four universities for application forms and for the descriptions of the courses of study (4, 95). The students were also advised to contract the College Entrance Examination Board to declare their intentions to take the examination scheduled for May 1951.

Under the plan, each of the four universities would offer its individual liberal arts programs. At Chicago, the liberal studies led to a culminating course which sought an integration of ideas through history and philosphy. Wisconsin offered the prescribed program of "Integrated Liberal Studies" with a core consisting of the studies of ancient, medieval, modern, and American cultures. The program at Yale was "Directed Study" and provided a common background of knowledge with philosphy serving as the instrument of integration in each of the two years. Columbia offered its prescribed courses, some of which were of an inter-departmental nature, in the humanities, the social sciences, and the sciences (4, 57, 58).

The officials at each of the participating colleges and universities realized that demonstrated ability, high academic promise, and emotional stability were the initial qualifications for the Early Admission Program. They were looking for the elusive quality which makes a scholar stand out among other superior students. The colleges further recognized that some students would benefit more by remaining in high school than by entering college early (58). For those students, the additional year or two in high school would provide time for them to develop higher levels of personal assurance and maturity. The colleges felt that the Early Admission Program was for the truly superior student who might by characterized by the initial qualifications, a good beginning in self-knowledge and self discipline, and by an unusual amount of intellectual, social, and emotional precocity.

The Program was an attempt by the colleges to meet the intellectual needs of the superior high school student but was not intended to supplant the high schools for all superior students. The University of Utah argued that the inference to the schools and the public that the colleges felt the high schools were a waste of time was inescapable (58). The inference was unfortunate because the Program required a special kind of student; one who was able to compress a regular three-year high school program and a four-year college program into five years, graduate with honors, and have no more serious emotional problems than other regular superior students.

The Program was not intended as a means for overhauling the structure of public education in the United States but the direct and indirect criticisms about the adequacies of the high school program which were used to rationalize the program (57, 58) made it seem so. The real issues and urgencies were lost in the context of the times; a period of national emergency. Part of the urgency can be explained by the estimates of the drop in college enrollments for the fall of 1951. Before the draft deferment bill became law, the estimates of the drop in enrollment ran as high as 25% (95), or 625,000 young men. By the fall of 1951, conditions had so changed that the actual loss in enrollment was only 10% (95), or 250,000 young men.

By the fall of 1951, other changes had been made in the Program. The participating colleges were expanded to include seven other colleges and universities: Fisk University, Lafayette College, University of Louisville, Oberlin College, Shimer College, University of Utah, and Goucher College. In addition, the Program was changed from a pre-induction program to a large scale experiment in education. Such major changes in the short span of four months were to have consequences in the evaluation of the Program.

Criticisms of the Early Admission Program

On May 4, 1951, less than two weeks after the announcement of the

Early Admission Program, the first major objection to the program appeared. It came in the form of a letter from Joseph B. Chaplin, president of the National Association of Secondary School Principals, and Paul E. Elicker, executive secretary of the National Association of Secondary School Principals, to all members urging them to resist the attempt to curtail the high school program through the use of the Early Admission Experiment by the colleges. Chaplin and Elicker had challenged the Program as being educationally unsound and damaging to the best interest of the students and the high schools. They pointed out that:

> . . . it is contrary to the opinions of leading educators from colleges and secondary schools recently stated at a Conference on Acceleration held by the American Council on Education on March 19-20, 1951, in Washington, D.C. This curtailment of secondary education under the guise of scholarship aid is more devastating to youth and the secondary school program than acceleration which was regarded, also by leading educators at the above conference, as unwise, unnecessary and unsound . . . (4)

Chaplin and Elicker recommended further that principals and superintendents block the program by discouraging students who receive such scholarship aid and by writing letters of protests to the universities involved in the experiment. They recommended that:

> . . . we use every means at our command to present to all educational, community and other meetings the implications of the unsound practice of curtailing secondary education and the subsequent admission of students to college before graduation. That we point out as effectively and as forcibly as possible these dangers, even with the alluring inducements of funds provided by the Ford Foundation. We must make citizens generally aware of the sinister implications of such a program especially if a scholarship award is offered to their sons . . . (4)

Chaplin and Elicker claimed that the project was in direct oposition to Recommendation 8 of the Nine Point Program made by the Committee on the Relation of Secondary Education to National security of the NASSP which read:

> . . . Early Admission to College. Recommended that secondary schools refrain from curtailing their educational programs to the extent that youth would, except in very unusual cases, enter college before their graduation from secondary schools. . . (4)

At the time that the Chaplin and Elicker letter was released, the Early Admission Program as envisioned by the colleges was intended for the very unusual student. However, by the fall of 1951, the Program in its expanded form was in opposition to Recommendation 8 because Shimer had admitted students with a wide range of aptitudes (58).

The full effect of the letter by Chaplin and Elicker was not known but the participating colleges did report that secondary school officials showed some resistance to the Program. In particular, Oberlin (58) felt that the resistance of secondary school officials was partly responsible for the difficulties encountered in attracting and selecting qualified students for the Program. Oberlin reported further that high school officials seemed motivated by genuine concern for the emotional development of the students.

Summary

Academic acceleration reappeared as a critical issue during the Korean Conflict (1950-52). The critical issue revolved about procedures to insure the continuitey of leaders and scholars for the period beyond the then current national crisis. Four universities proposed the pre-induction experiment which grew into the Early Admission Program to reach young men of high academic promise before they were called for active duty with the armed services. Even before the national crises had been alleviated, Chaplin and Elicker, two officials of the National Association of Secondary School Principals, had prepared a letter sharply criticizing the Program. The new issues became the potentially dangerous emotional adjustments of young men who enter college early and the alleged encroachment of the colleges on the affairs of the high schools. By the fall of 1951, eleven colleges and universities were participating in the large scale innovation, the Early Admission Program.

Chapter 4

The Early Admission Program as an Experiment

The Early Admission Program was a large scale effort toward academic acceleration between schools and colleges and was financed by grants totalling over two million dollars from the Fund for the Advancement of Education. The Program was initially a pre-induction experiment which grew into a major project to seek solutions to the imperative demands upon the American educational system for "a broad enough base to prepare a competent citizenry, and high enough quality to produce effective leadership" (57, p. 16). The Program was consistent with three guidelines established by the Fund: (1) To view education as a whole and to relate clearly and logically its institutional parts, (2) to reexamine existing curricular arrangements and to successive educational stages, and (3) to seek ways to provide for greater flexibility in accommodating individual students of widely differing needs and capabilities (57, p. 17).

In perspective, there were four other efforts undertaken by the Fund for the Advancement of Education in the early 1950's. The first effort was the School and College Study of General Education. It sought a unity between the last two years of high school and the first two years of college through general education. The School and College Study was a joint undertaking of the faculties of three private preparatory schools for boys (Andover, Exeter, and Lawrenceville) and the faculties of three private universities (Harvard, Princeton, and Yale) (57). The report of the joint faculties, General Education in School and College, evoked much interest among school authorities.

The second undertaking brought together the public school system of Portland, Oregon, and the faculty of Reed College. In this project, the public school children of exceptional endowment participated in programs of enriched educational opportunities (57).

The third project may have stemmed from the work of the School and College Study of General Education. It evolved as the faculty of Kenyon College asked itself and others, "Could the general education now provided in the last two years of high school and the first two years of college be completed in a shorter time without losing the essential values of a liberal education?" The Kenyon Plan became the School and College Study of Admission with Advanced Standing, and still later, the Advanced Placement Program (57).

The fourth project resembled the Portland Project. It was the Atlanta Experiment in Articulation and Enrichment in School and College, a cooperative venture between Agnes Scott College, Emory University, Oglethorpe University, and the Westminster Schools. All four institutions are in or near Atlanta, Georgia. The project was later expanded to include a public high school in Atlanta (57).

Three reports on the Early Admission Program (41, 57, 58) have already been published with extensive data and interpretations of the data. The reports supported the conclusion that, based upon measures of academic performance and ratings of personal adjustments in college, the accelerated students were highly successful in the Program.

The reports, however, reflected the inadequate research design of the Program and, thereby, cast some doubt on the findings. For example, the data reported in the earlier reports were incomplete on large numbers of both the experimental and the control students who had entered the Program in 1951 and 1952. The incomplete data was the result of the lack of uniform data-gathering procedures. In 1953, the Educational Testing Service of Princeton, New Jersey, assumed responsibility for the evaluation of the Program and standardized the data collection procedures with three questionnaires.

In fairness to the earlier reports, it must be remembered that the Early Admission Program did not begin as an experiment in education. It became one sometime between April 22, 1951, when the Fund announced the initial grant for the Program, and September 1951, when the Fund announced the initial grant for the Program, and September 1951, when the colleges and universities opened for the fall term. The five-month period was not sufficient to develop and refine a research design that would have provided complete, consistent and relevant data for such a large scale undertaking.

The Sub-experiment

Data from the three earlier reports and from questionnaires completed by the control and experimental groups in 1953 were reexamined in 1960 and 1961. The reexamination was an *ex post facto* evaluation of a sub-section of the Early Admission Program. The sub-section or sub-experiment of the Program was concerned with the data of only the students, who in 1951, had entered the University of Chicago, Columbia University, Oberlin College, the University of Wisconsin, and Yale University. The students were selected because their scores on the Graduate Record Examination of the Educational Testing Service showed that they were of comparable abilities and aptitudes. Of the 420 students in the Program in 1951, 240 had attended the five colleges and universities in the sub-experiment (see Table 4.01).

The major objective of the sub-experiment was to reexamine the effects of early admission to college on the experimental students of

Table 4.01

The Control and Experimental Students at Five Colleges and Universities in 1951 (58, p. 92)*

Group	Colleges and Universities					Totals
	Chicago	Columbia	Oberlin	Wisconsin	Yale	
Control	57	46	30	68	51	252
Exp.	60	51	25	52	52	240

* Includes both males and females.

comparable abilities and aptitudes who had entered five colleges and universities.

The Early Admittees and the Control Group

Each college in the program had selected an experimental group of students using its own criteria. The colleges had generally based their decisions for accepting the experimental students on high school records, scores on the Scholastic Aptitude Test (see Tables 4.02 and 4.03), scores on achievement tests, the recommendations of the high school principals, and personal interviews with the candidates (57, 58).

Because each college had acted autonomously in the use of procedures of admissions and techniques for appraising the social and emotional maturity of the applicants, the experimental groups may not have been equivalent between colleges (42).

In general, the students of the experimental group had not graduated from high school (93%), had come from families in which the occupations of the "breadwinning" parent were predominantly professional or business (71%), and had chosen undergraduate studies in mathematics and sciences (51%). In addition, the experimental students had come from medium-sized or larger cities, had attended public schools in which the sizes of the senior classes were over 100 students, had come from families whose annual incomes were over $5,000, and had fathers who had at least graduated from high school. Similar general information about the control group was not available (57, 58).

The colleges selected a matching group of regular superior students with which to compare the progress and performance of the experimental group. The major differences between the two groups were that the students in the experimental group had been two years younger than the control students and had not graduated from high school. The

Table 4.02

Scholastic Achievement Test Scores of the Experimental Group, 1951

(57, p. 114)

Score		Colleges and Universities			
		Chicago	Columbia	Wisconsin	Yale
Verbal	751-up	2	0	1	0
	701-750	11	4	3	5
	651-700	16	5	9	13
	601-650	11	16	8	13
	551-600	12	11	20	11
	501-550	4	9	7	9
	500-below	3	6	4	1
Quantitative	751-up	9	6	4	9
	701-750	14	11	11	9
	651-700	9	9	10	10
	601-650	15	9	8	6
	551-600	7	6	11	14
	501-550	3	6	6	4
	500-below	2	4	2	0

Table 4.03

Examinations used to Select the Experimental Group, 1951 (57, p. 111)

Examination	Colleges and Universities				
	Chicago	Columbia	Oberlin	Wisconsin	Yale
CEEB Scholastic Aptitude	Yes	Yes	No	Yes	Yes
OSU Psychological Examination	No	No	Yes	No	No
CEEB Achievement Tests	No	No	No	Yes	Yes

colleges matched the control and experimental groups using scores on the Scholastic Aptitude Test, scores on the Psychological Examination of the American Council on Education or composite scores of both tests. The Fund reported that some of the colleges attempted to match the control and experimental students on family background, type and location of home community, and amount of scholarship aid. However, the Fund did not identify these colleges (58, p. 15).

The Treatment

In general, both the control and the experimental groups studied in the same academic program for the first two years. The modifications or allowances made for the experimental students (see Table 4.04) were carried out only for the first year of the Program. As the students progressed in their studies, their diverse interests and career goals led them rapidly into the different offerings of the colleges.

Evaluative Techniques

The colleges compared the academic performances of the control and the experimental groups annually. To assess personal adjustments of the students, the colleges relied upon the four questionnaires prepared by the Educational Testing Service. Two of the questionnaires were completed at different times by the students; the other two were completed by the colleges. In the sub-experiment, the Chi-squares test was used extensively to examine the differences between the responses of the two groups to the items of the questionnaires.

In the Early Admission Program, the adjustment of the experimental group to college had been assessed by a team of psychiatrists led by Dr. Dana Farnsworth, Director of University Health Services at Harvard University. Other members of the committee were Dr. Daniel H. Funken-

Table 4.04

First Year Programs of the Early Admission Program, 1951 (57, 58)

	Colleges and Universities				
	Chicago	Columbia	Oberlin	Wisconsin	Yale
Academic Program	No difference	No difference	No difference	Integrated liberal studies	Directed studies
Living Accommodations	Regular dorms	Regular dorms	Regular dorms	Rooming house--dorm shortage	Regular dorms
Extra Class Activities	53 of 59	50 of 51	No report	Yes, but no count given	45 of 52
Withdrawal first year	7 of 60	2 of 51	2 of 25	0 of 52	6 of 52

stein, member of the Department of Psychiatry at the Harvard Medical School, and Dr. Bryant Wedge, member of the Department of Student Health at Yale University. Further evaluations were done by Richard Pearson, Associate Director of the College Entrance Examination Board.

Socioeconomic Backgrounds of the Control and Experimental Groups

An examination of occupational status of the parents of both groups showed that the proportions of fathers in different occupations were significantly different between the groups (see Table 4.05). A higher proportion of fathers of the experimental group were employed in professional occupations. No significant differences were noted on the occupations of mothers of both groups. Too, no significant differences were noted on home community.

The significant differences which were observed on the occupations of fathers suggested that the experimental and control groups had not come from similar socioeconomic backgrounds.

High School Backgrounds of the Control and Experimental Groups

Two items of significant differences between the control and the experimental groups appeared in high school information (see Table 4.06). The first difference, type of high school last attended, resulted from the larger proportions of the experimental group which had attended urban public high schools as compared with the larger proportions of the control group which had attended non-parochial private preparatory high schools. The second difference, percentile rankings in high school, resulted from the absence of a low tail for the distribution of the rankings of the experimental students.

The significant differences of the rankings of the two groups can be discounted because they were based on performances at two completed

Table 4.05

Pre-college Information, ETS Questionnaire,

1953

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 9					
Father's Occupation			13.5	4	SD
1. Accountant, lawyer	12	14			
2. Manager, manufacturer, executive, owner, proprietor, supervisor	45	43			
3. Professor, teacher, doctor, dentist, minister, arts	39	80			
4. Retailer, salesman, middlemen, clerical	30	22			
5. Skilled, unskilled, semi-skilled, other	30	22			
	156	181			
Item 10					
Mother's Occupation			1.2	4	NSD
1. Housewife	96	114			
2. Manager, manufacturer, executive, owner, proprietor, supervisor	10	7			
3. Professor, teacher, doctor, dentist, minister, arts	27	26			
4. Retailer, salesman, middlemen, clerical	23	25			
5. Skilled, unskilled, semi-skilled, other	5	4			
	161	176			
Item 8					
Type and Size of Home Community			.9	5	NSD
1. City of more than 100,000	78	92			
2. Suburb of large city	35	35			
3. City (not suburb) of 30,000-100,000	18	17			
4. City (not suburb) of 10,000-30,000	12	12			
5. Town of 2,500-10,000	15	19			
6. Town under 2,500	14	14			

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[a] Level of confidence .01

[b] NSD no significant difference; SD significant difference

Table 4.06

Pre-college Information, ETS Questionnaire, 1953

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 17 Type of High School or Preparatory School Last Attended			19.6	4	SD
1. Public high school in city	84	121			
2. Public high school in suburb of city	22	20			
3. Public or consolidated high school--rural	20	26			
4. Private, non-parochial	37	14			
5. Private, parochial or private military	10	8			
	173	189			
Item 18 Size of Senior Class in High School			2.9	4	NSD
1. Less than 50	27	24			
2. 50-99	17	16			
3. 100-199	28	27			
4. 200-499	70	70			
5. 500-up	30	45			
6. Unknown	0	6			
	172	188			
Item 59 Percentile Ranking in High School			32.2	2	SD
1. 90-99%	92	116			
2. 80-89%	23	31			
3. 79% and below	42	7			
	157	154			

[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

grade levels; the experimental group was ranked on work completed in the tenth grade and the control group was ranked on work completed up to the twelfth grade.

No significant differences were observed on type of high school last attended reinforces the suggestion that the control and experimental groups had come from different socioeconomic backgrounds. Although the significant difference observed in high school ranking can be discounted, it suggests that caution be used in generalizing about the program and the successes of the experimental group because the two groups may not have been of similar abilities.

Aspirations of the Control and Experimental Groups

Table 4.07 displays the responses of the two groups to choices of fields of study and choices of future occupations. The Chi-square test for significant differences between the two groups was not carried out on the two items of Table 4.07 because the frequencies of the cells fell below the levels required for meaningful use of the test. Adjoining cells were not merged to obtain appropriate cell frequencies because the result would have been the pairing of unlikely cells.

Table 4.07 shows that more control students than experimental students selected business as their choices of undergraduate major field of study; the experimental students chose science and methematics for their undergraduate major fields of study. In addition, Table 4.07 shows that a larger proportion of the control group as compared with the experimental group indicated law as their first choice of future occupation.

The data on aspirations of the control and experimental group

Table 4.07

Undergraduate Information, ETS Questionnaire, 1953

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 30 First Choice of Major Field of Study			4.4	4	NSD
1. Undecided	15	20			
2. Fine arts, applied arts, clergy, other	6	8			
3. Education	43	41			
4. Engineering, medicine, science	87	108			
5. Business	15	8			
	166	185			
Item 31 First Choice of Future Occupation			11.0	6	NSD
1. Undecided	45	41			
2. Fine arts, applied arts, military or government service, social service, other	18	20			
3. Business	12	8			
4. Education	13	20			
5. Engineering, medicine, science	51	79			
6. Law	18	9			
7. Clergy	9	7			
	166	184			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

were similar to the observed occupational categories of the fathers of both groups.

Undergraduate Activities of the Control and Experimental Groups

The academic ratings of the students of the control and the experimental groups in their first and fourth years of college are displayed in Table 4.08. Both groups seemed comparable on their percentile rankings in college.

The ratings were not tested for signigicant differences but the overall distribution of the first year ratings and the fourth year ratings suggests a stability in the academic performances of both gourps. A broader base for assessing the performance levels and the stability of the performance levels should have included a score on the Graduate Record Examination (see Table 4.09).

For the 192 experimental students and the 144 control students who took the Graduate Record Examinations, earlier reports (57, 58) gave only the group means of scores. The earlier reports gave no information about the number of students at each college who took the examination. Hence, thr group means should be used only for identifying trends or tendencies about the two groups. The entires of Table 4.09 indicate that the experimental group performed as well as the control group.

The ratings and indications from the performances on the Graduate Record Examination support the conclusion that the experimental group was as successful as the control group in academic performance.

Emotional Adjustment of the Experimental Group

Three separate groups assessed the emotional adjustment of the

Table 4.08

Ratings of Students in their First and Fourth Years, 1951 and 1955 (42)

Year	%ile Rank	Colleges and Universities							
		Columbia		Oberlin		Wisconsin		Yale	
		Exp.	Con.	Exp.	Con.	Exp.	Con.	Exp.	Con.
First Year--1951	80-99	18	12	7	10	35	16	16	16
	60-79	11	12	6	5	11	10	9	16
	40-59	12	8	6	7	6	10	7	7
	Lo[illegible]	6	14	4	9	0	8	13	12
	Un[illegible]	0	0	0	0	0	1	0	0
		47	46	23	31	52	4[illegible]	45	51
Fourth Year--1955	80[illegible]	17	7	3	9	20	8	15	10
	6[illegible]	6.	9	6	2	4	5	11	1[illegible]
	[illegible]	5	3	2	4	3	2	2	1[illegible]
	L[illegible]	5	8	4	7	4	6	10	1[illegible]
	Unknown	8	7	1	1	1	17	5	2
		41	34	16	23	32	38	43	44

Table 4.09

Graduate Record Examination Mean Scores*
(58, p. 106)

1951 Group	Area Test		
	Social Science	Humanities	Natural Sciences
Chicago			
Exp	664	723	676
C	658	676	669
Columbia			
Exp	641	673	611
C	651	672	625
Oberlin			
Exp	618	641	598
C	579	656	569
Wisconsin			
Exp	656	639	667
C	589	600	605
Yale			
Exp	657	636	585
C	635	637	577
All 11 Colleges in the Program			
Exp	620	632	606
C	557	578	558
Other Seniors 1955	444	450	452

* N = 192 for all experimental students in all colleges

N = 144 for all control students in all colleges experimental group to college. They were the colleges, a psychiatric evaluation team headed by Farnsworth, and Pearson of the Educational Testing Service.

In arriving at the ratings of emotional adjustment of the students, the colleges considered many factors. Included among the factors were poise and self-confidence in social situations, leadership ability, study habits, participation in group activity, gregariousness, personal appearance, degree of dependence on family, worry and emotional control, adjustment to the opposite sex, ease in conversation, academic program planning, and educational interests (58). In some cases, two faculty members independently rated the same student, and a third faculty member arrived at a composite rating. The results of the ratings on adjustment by the colleges is shown in Table 4.10.

The entires in Table 4.10 show the ratings of the experimental students at the end of the first year and also at the end of the fourth year. The report of the Fund (58) claimed that the large numbers of poor ratings in the first two years of the project resulted from the combination of initial adjustment difficulties, the age of the experimental students, and the nature of the program itself. The data for the four-year period showed that a high percentage of the experimental students had experienced good-to-excellent emotional adjustments in college.

The information presented in Table 4.10 is ambiguous because there is no way of determining how many of the students who were rated "poor" in their first year were still students in the fourth year of the experiment. The drop in the number of poor ratings over the four-year period of the experimental group can be attributed to the attrition of the poorly adjusted student as well as to the overcoming of adjustment

Table 4.10

Ratings of Emotional Adjustments by Faculty, 1951

Group at all Colleges and Universities (42, Table 1-A)

Year	Group	Number of Students		
		Good-to-Excellent	Poor	Unknown
First Year--1951	Exp.	314 (85%)	32 (9%)	24 (6%)
	Con.	232 (55%)	19 (4%)	171 (36%
Fourth Year--1955	Exp.	205 (90%)	15 (7%)	8 (4%)
	Con.	168 (65%)	7 (3%)	82 (32%

difficulties by the students.

The colleges and universities in the Program did not feel that early admission to college was the determining factor of the cases of maladjustments which occurred. Of the 32 cases of maladjustments reported for the entire 1951 group, the colleges and universities considered only eight cases as those for whom later entry into college would have been an advantage. The colleges and universities concluded that the control group and the experimental group had similar adjustment problems.

The second group to assess the adjustment problems of the experimental group was the psychiatric evaluation team headed by Farnsworth. The team was particularly concerned with evaluating the withdrawals of students from the participating colleges and universities (see Table 4.11). The team found that some of the factors for withdrawal from college were realistic ones which were unrelated to early admission to college. They found that immaturity with inadequate goal-directed behavior (58) accounted for 34 out of the 147 withdrawals. The psychiatric evaluation team concluded that the experimental group showed no more psychiatric difficulties than the control group in college. They felt, further, that the experimental group had met their definition of satisfactory adjustment.

> What is desirable is not adjustment to the group at all costs, not good interpersonal relations in all situations, but real autonomy, i.e., men sufficiently free from both social and cultural pressures and from their own inner biases, needs and drives that they are able to assess the realities of situations and act on this basis. Although such men prize warm interpersonal relations and getting along with the froup as a satisfactory part of living, they are not ends in themselves (58, p. 47).

The third rating of the adjustment of the experimental group to college was conducted by Pearson. He examined the responses of the control and the experimental groups to a questionnaire administered

Table 4.11

Failures, Withdrawals, and Transfers

of the 1951 Group (58, p. 112-113)

	Colleges and Universities									
	Chicago		Columbia		Oberlin		Wisconsin		Yale	
	E	C	E	C	E	C	E	C	E	C
Fail	7	8	8	2	2	2	6	8	10	4
Left for other reasons	3	8	1	8	2	3	2	13	0	2
Transfer	3	5	0	1	6	3	15	0	1	0
TOTALS	13	21	9	11	10	8	23	21	11	6

during the senior years in college. Fearson concluded that, although the experimental students had indicated more initial adjustment difficulties than the control students, the experimental students had been as successful in over-all adjustment to college as had the control students.

All three of the evaluation groups were in agreement that the experimental group had made satisfactory adjustments to college.

Non-academic Student Activities

Table 4.12 displays the ratings by the colleges of the control and experimental groups of extent of participation in athletics, in number of offices held in student organizations, in memberships in student social organizations, and in the extent of dating. The Chi-square test showed significant differences between the responses of the two groups to the item of memberships in student social organizations. Thirty-eight of

item of memberships in student social organizations. Thirty-eight of

the 205 students of the experimental group who were rated by the colleges had not been eligible for membership in social clubs during the first two years of the Program. The ineligibility was probably due to the young ages of the experimental students.

Aside from dating, slightly more than 50% of all the students rated by the colleges were below average or had not participated in athletics, social clubs or other student organizations. Without the control group, the lack of activity could have been interpreted as a loss of opportunity by the students who entered college early. However, the same pattern of non-activity occurred with the control group. Whatever the reasons were for the non-activity of the experimental group, they were not related to early admission to college.

Student Use of Time

Each student in the control and the experimental group was asked

Table 4.12

Undergraduate Information, College Ratings, ETS Questionnaire, 1953

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 66					
Extent of Participation in Athletic Activities			2.3	4	NSD
0. None	47	59			
1. Less than average	40	63			
2. Average	35	43			
3. More than average	20	34			
4. Extensive	8	7			
	150	206			
Item 68					
Number of Offices Held			1.9	3	NSD
0. None	94	121			
1. One of minor importance	29	35			
2. More than one of minor importance	12	28			
3. One of major importance[c]	8	8			
4. More than one of major importance[c]	3	5			
5. Combination of major and minor[c]	3	7			
	149	204			

(Table continued on next page)

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square

Table 4.12 (Continued)

Item	Observed Responses		X^2	df	Sig.[a,b]
	Con.	Exp.			
Item 69 Membership in Fraternity or Social Club			27.6	3	S
1. Member	45	49			
2. Non-member	108	104			
3. Not eligible	3	38			
4. None available	16	14			
	172	205			
Item 70 Extent of Dating			8.6	4	[illegible]
0. None	8	20			
1. Less than average	32	58			
2. Average	79	102			
3. More than average	30	24			
	149	204			

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[a] Level of significance .05

[b] NS=Not significant difference; S=Significant difference

to account for the hours of the week immediately preceding the week he completed the questionnaire. He was asked to indicate the number of hours he had spent in student employment, in preparing assignments, and in recreation. The Chi-square test of the differences in the responses of the two groups showed significant differences in the time spent in student employment. No significant differences were observed on the other two items (see Table 4.13).

The distribution of responses on student employment showed that over 60% of the experimental group had spent no time in student employment compared with 44% of the control group. Among the control students, 11 had spent more than 20 hours in employment. The significantly greater number of hours of student employment of the control group did not seem to affect the academic performance of the control group (see Table 4.08). The data suggest that the real potential of the control group for academic performance may have been hidden by the amount of time it spent in student employment.

The control group and the experimental group were similar in their use of time for studying and recreation. The similarity is surprising because so many of the control students had indicated student employment. It is possible that the younger experimental students used up more time in sleeping than the older control students or that the experimentals were less efficient than the control students in the use of time.

Reactions of the Students to College

Among the criticisms of early admissions to colleges was a claim that the college program of studies was inappropriate for students of high school age. The responses of the control group and the experimental group to questions about academic handicaps, value of the col-

Table 4.13

Undergraduate Information, Student Responses,

ETS Questionnaire, 1953

Item	Observed Responses		X^2	df	Diff.^{a,b}
	Con.	Exp.			
Item 14 Number of Hours per Week Spent Working for Pay			47.3	4	SD
0. None	74	125			
1. Less than 2	23	31			
2. 2-5	5	13			
3. 5-10	15	10			
4. 10 or more	53	10			
	170	189			
Item 24 Number of Hours per Day Spent Studying in Past Week			4.1	6	NSD
1. 1	8	5			
2. 2	33	26			
3. 3	40	43			
4. 4	46	54			
5. 5	21	29			
6. 6	11	14			
7. 7 or more	9	14			
	168	185			
Item 25 Number of Hours per Day Spent in Recreation in Past Week			11.0	5	NSD
1. 1	11	14			
2. 2	40	46			
3. 3	55	46			
4. 4	25	31			
5. 5	11	28			
6. 6 or more	25	18			
	167	183			
Item 27 Extent of Dating			10.7	3	NSD
0. None	4	19			
1. Less than average	43	54			
2. Average	83	82			
3. More than average	37	31			
	167	186			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

legiate experience, value of the courses taken, and the reactions to college instructors showed no significant differences when tested by Chi-square.

The responses of the experimental group showed that 34% of the students had experienced some academic handicap which they had attributed to insufficient preparation in high school (see Table 4.14). A similar proportion of the control group had made the same response. Therefore, the academic handicaps were not attributable sole to early admission to college.

More than half of both groups rated their college experience up to that time as being of great value; fewer had identified the courses as almost all worthwhile, and fewer still had thought their teachers were interested in them as individuals. The similarity of the responses of the experimental group and the control group showed that negative reactions about aspects of college work and about instructors were not clearly attributable to early admission to college.

Reactions of the Colleges to the Students

In the Program, the participating colleges had been asked to rate the health and adjustments of the early admittees. The ratings showed significant differences between the experimental group and the control group on physical health, but no significant differences on mental health, extent of dating, adjustment to college, and popularity (see Table 4.15).

The colleges felt that significantly more of the experimental students than control students were of poor health. The ratings were made near the end of the second year of the Program, but it is not likely that the lealth ratings were attributable to early admission to college. Unfortunately, no ratings were made of the experimental group

Table 4.14

Undergraduate Information, Student Response,

ETS Questionnaire, 1953

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 29					
Have you been Handicapped by Faulty High School Preparation?			.9	2	NSD
1. Yes	19	16			
2. No	102	121			
3. A little	47	49			
	168	186			
Item 32					
Value of College Experience			8.6	3	NSD
1. Little or nothing	0	0			
2. About half worthwhile	21	10			
3. More than half worthwhile	34	34			
4. Of great value	88	122			
5. Too early to judge	24	20			
	167	186			
Item 33					
Value of Courses Taken			6.6	4	NSD
0. None worthwhile	0	0			
1. Less than half worthwhile	16	15			
2. About half worthwhile	42	36			
3. More than half worthwhile	39	36			
4. Almost all worthwhile	48	56			
5. All worthwhile	22	42			
	167	185			
Item 34					
Number of College Instructors Who Took Interest in Students as Individuals			3.6	4	NSD
0. None[c]	3	8			
1. Less than half[c]	38	46			
2. About half	48	39			
3. More than half	23	32			
4. Almost all	42	45			
5. All	13	16			
	167	186			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square

Table 4.15

Undergraduate Information, College Ratings,

ETS Questionnaire, 1953

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 43					
Physical Health Rating[c]			9.8	2	SD
1. Very poor	0	0			
2. Poor	5	19			
3. Good	67	72			
4. Excellent	79	64			
	151	155			
Item 44					
Mental Health Rating[d]			1.6	2	NSD
1. Very poor[e]	2	3			
2. Poor[e]	8	12			
3. Good	35	29			
4. Excellent	106	109			
	151	153			

(Table continued on next page)

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Rated by Student Health Center or other college medical service.

[d] Rated by Student Health Center or other college medical service.

Table 4.15 (Continued)

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 71 Adjustment to College[c]			.9	3	NSD
0. Very poor[d]	3	7			
1. Poor[d]	13	20			
2. Moderately poor	42	53			
3. Good	61	81			
4. Excellent	31	49			
	150	210			

(Table continued on next page)

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[a] Level of confidence .01

[b] NSD No significant difference; SD significant difference

[c] As rated by dean or advisor compared with other members of class.

[d] Adjoining cells merged for Chi-square.

Table 4.15 (Continued)

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 72					
Popularity Rating[c]			2.2	3	NSD
0. Disliked[d]	1	6			
1. Unnoticed[d]	12	22			
2. Accepted	51	70			
3. Well-liked	68	88			
4. Leader	17	23			
	149	209			

---

[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] As rated by dean or advisor compared with other members of class.

[d] Adjoining cells merged for Chi-square.

in the first of the program.

On an over-all basis, the responses of the colleges showed that the experimental group was as successful as the control group in social adjustments in college. On an individual basis, the colleges felt that 10% of the experimental students who had made poor adjustments to college life might have been better off in high schools free from the stresses of collegiate early admission.

Conclusions

The data of the Early Admission Program as reexamined and rearranged indicate that the experimental and control students did not come from similar socioeconomic backgrounds. Limited data based upon significant differences of the occupations of fathers and significant differences in the type of high school last attended support the conclusion.

The data also suggest that the experimental and control groups may have been of different ability levels. The distributions of high school rankings, although they were for different years and may be discountable, show a low end tail for the control group but none for the experimental group. The difference was significant in favor of the experimental group. The finding could mean that the colleges had not been successful in matching the two groups. It could also mean that the experimental group would appear systematically ahead of the control group measures of academic performance.

The difference in high school ratings and its effects on college performance were inconclusive. The indications of significant differences in socioeconomic backgrounds, however, were important qualifiers for the Program because socioeconomic background may influence the decisions and motivations of the students while they are in college.

In academic performance, the experimental students were comparable to the control students in the same colleges. The conclusion is supported by the findings of no apparent difference between the two groups in academic rankings in colleges and in scores made on the Graduate Record Examination. In non-academic performance, the colleges rated the two groups of students as similar in adjustment to several facets of college life.

The general conclusion, based upon the ratings of the colleges and the responses of the students, is that the experimental group had gained two years in their academic programs leading to career goals without visible ill-effects.

Unanswered Questions

The unanswered questions are related to long-range effects of early admission to college. Did the early admittee, in fact, get into a graduate school of his choice? Did the early admittee have similar activity patterns when compared to regular superior students in social, economic and occupational areas? Did the early admittee, because he made career decisions two years ahead of his chronological peers, suffer instability in his career development? A follow-up study is needed to provide answers for some of the questions raised.

Chapter 5

The Early Admission Follow-up Study

Preliminary Survey

In March 1960, the Fund for the Advancement of Education approved a request for the reexamination of the data gathered during the Early Admission Program. The Educational Testing Service retrieved the raw data from storage and made them available for the follow-up study. By 1962, the data included four questionnaires on 1024 male and 326 female participants of the Program almost all of whom had already graduated from college (see Table 5.01).

A preliminary survey of the data revealed that the colleges had not been consistently conscientious in completing the questionnaires so that much of the raw data was incomplete. The state of the data explained the omissions of the reports by the Fund and by Ekstrom (41, 42, 57, 58). Chapter 4 discusses part of the data.

Popular

Following the preliminary survey of the data, the population for the follow-up study was limited to the same sub-section of the Program discussed in Chapter 4. It was limited to the male students and their

discussed in Chapter 4. It was limited to the male students and their

counterparts who, in 1951, had entered five colleges and universities: The University of Chicago, Columbia University, Oberlin College, the University of Wisconsin, and Yale University.

The delimitation of the follow-up study was based upon two considerations. The first consideration, as in the sub-experiment in Chapter 4, was an attempt to derive a more homogeneous group than the

Table 5.01

Participants in the Early Admission Program

1951-1954*

Group	Year				
	1951	1952	1953	1954	Totals
Experimental					
Males	348	363	165	148	1024
Females	72	77	89	88	326
Total	420	440	254	236	1350
Control					
Males	336	400	185	136	1057
Females	91	90	78	87	346
Total	427	490	263	223	1403

* Reports of the Fund for the Advancement of Education and Ekstrom ([illegible]) do not agree on the size of the 1951 group. The figures shown here are from the reports of the Fund. The figures shown by Ekstrom reflect the attrition of the first year.

total group which was discussed in earlier reports. The experimental students in the Program had entered eleven colleges and universities. In 1955, when the experimental students took the Graduate Record Examination, their scores indicated that real differences had existed between the abilities of the experimental groups which were in different colleges. The scores made by the experimental students at six of the eleven colleges and universities indicated that the students were of similar abilities and aptitudes. The sixth college, Goucher, was a college for women. Because there were only 30 women in the experimental groups of the six colleges, and because the women were difficult to locate, the follow-up study became concerned with only the men who had attended five colleges and universities.

The second consideration was that of the four groups of experimental students who had participated in the Program, only the group which had entered college in 1951 had been examined by both the Farnsworth team of psychiatrists and by Pearson. Authoritative statements about the adjustment to college of the experimental groups was available only for the 1951 group. In 1953, the second phase of the Program got under way with a reduction in the number of experimental students at each of the participating colleges. In order to take advantage of the larger number of students who had entered college early and to take advantage of the authoritative studies of adjustments to college, the follow-up study concentrated on the male students in the 1951 group.

Objectives

The two major objectives of the follow-up study were (1) to examine the long-range effects of early admission to college and (2) to evaluate the Early Admission Program as a large scale innovation in education.

The examination of the long-range effects of early admission focused upon comparisons of the graduate and post-graduate activities of the control and the experimental groups. The examination centered on the question, "What happened to the early admittees after college?" and not with "the wisdom of early admission to college."

The second objective, the evaluation of a large scale innovation in education, was concerned with the Program, itself, and not with the participants. It was concerned with the shortcomings, strengths and findings of the Program.

Research Questions

The follow-up study attempted to answer five questions:

1. How comparable were the experimental and control groups? The examination of the data of the sub-experiment (see Chapter 4) had indicated that the experimental and control groups had come from significantly different socioeconomic backgrounds. Because of the incompleteness of the original data, the question was reexamined in the follow-up study.

An answer to the question was sought by the test of the null hypothesis that:

> There were no significant differences between the control group group and the experimental group in socioeconomic backgrounds.

2. Were the experimental students able to compete favorably with the control students in undergraduate academic performance? An answer to the question was sought by the testing of the null hypothesis that:

> There were no significant differences between the control group and the experimental group in undergraduate performance.

3. Were the experimental students able to compete favorably with the control students for positions in graduate schools of their choices? An answer to the question was sought by the testing of the null hypothesis that:

> There were no significant differences between the control group

> and the experimental group in the attainment of choices of and entrances into graduate schools.

4. Did the experimental students have post-graduate occupational activities similar to the activities of the control students? An answer to the question was sought by the testing of the null hypothesis that:

> There were no significant differences between the control group and the experimental group in occupational attainments and activities.

5. Did the experimental students have post-graduate socioeconomic activities similar to the activities of the control students? An answer to the question was sought by the testing of the null hypothesis that!

> There were no significant differences between the control group and the experimental group in post-college socioeconomic activities.

Instruments

Three instruments made up the package used to obtain data for the follow-up study—a questionnaire, a letter of explanation, and a transcript release form (see Appendix C). The questionnaire contained seven parts and was a folded sheet containing four printed sides. The letters of explanation were individually typed. One form of the letter was sent with the first mailing of the questionnaire; a second form was sent to urge the subjects who were late in responding to fill out and return the questionnaires. Each respondent was asked to sign a transcript release form so that official copies of his transcripts could be obtained from the colleges he attended.

The follow-up questionnaire provided pre-college information, information on general family background, information on general activity in high school and in college, information on academic activities, information on current personal social status, information on current personal economic status, and information on post-graduate intellectual or adademic activities. The preliminary survey had revealed that the original questionnaires used with the 1951 group (see Appendix A) had provided predominantly subjective data. The subjective data did not lend itself readily to other high-powered statistical procedures outlined by Tatsuoka and Tiedeman (109). In spite of the statistical limitations of the subjective data of the original questionnaires, the follow-up questionnaire was design was based upon a desire for consistency between the existing data and the follow-up data.

A commercial artist working with a publishing company prepared the format of the follow-up questionnaire. As a result, the questionnaire was suitably official and pleasing in appearance.

Among the difficulties encountered during the preparation of the items of the questionaire was the preparation of items on financial status. Such items sought information of a highly personal and confidential nature. Since the information was needed primarily to establish patterns of earning power and current accumulated financial wealth, the problem was partly solved by preparing items which sought the intervals of high frequencies and not specific information on each respondent.

The questionnaire was developed at the same time that the data from the earlier questionnaires were being reexamined. The multiplicity of occupational preferences pointed out another difficulty. The coding of information that has not limits resulted in the expenditure of valuable time to find a format with which to discuss and present the information. Therefore, items were prepared for the follow-up questionnaire which only identified levels of occupational attainment and general nature of occupations instead of identifying specific current occupations of the control and experimental groups.

The two requirements for approval of the questionnaire were that it be convenient for the respondents to complete and that the responses be easily transferable to data processing cards.

The follow-up questionnaire was pretested with 20 seniors and graudates of the University of Hawaii. The pretest population, unfortunately, was not sufficiently varied to identify all of the typographical omissions on the questionnaire or the ambiguities of certain items. The omissions and ambiguities were discovered when the questionnaires were returned by the respondents of the follow-up population.

Procedures

The follow-up questionnaires were sent to 410 men—197 controls and 213 experimentals. Respondents were 121 controls (61%) and 144 turns (see Appendix D) shows 80 unclaimed questionnaires (21%) and 50 subjects for whom no records are available (12%). Two respondents specified stringent conditions under which the information they supplied could be used. They were classed as "no records available" and their questionnaires destroyed.

The addresses used in the first mailing were obtained from the original questionnaires used in the Early Admission Program in 1953. The addresses were the last known addresses of the parents of the control and experimental groups. A "Please Forward" stamp was prominently displayed on each envelope. In retrospect, a better idea would have been to ask for the explicit information from the post office about its information on the last known addresses of those members of the control and experimental groups who did not respond to the first mailing.

Several students who were in the Wisconsin group wrote to Mr. Herbert M. Howe, their advisor in college, informing him about the follow-up study. Mr. Howe, in later correspondences with the follow-up study, provided a comprehensive and accurate list of the current addresses of the experimental students who had attended the University of Wisconsin.

Although several strategies were considered in planning the tracer methods, time became the motivating factor that led to an appeal to the Selective Service Board in Washington, D. C., for permission to obtain from local boards the current addresses of all the men who were in the 1951 group. When the Selective Service Board denied the permission, the tracer efforts were effectively reduced to a search by mail. Two tracer methods, telegrams and telephone calls, were not used because they were contingent upon locating the current addresses of the young men. In the search by mail, copies of the questionnaire, transcript release forms and two separate appeal letters were repeatedly sent to each non-respondent until the pattern of returned mail established that the men either were not locateable or did not intend to respond.

The estimated time of nine months for the completion of the follow-up study was overly optimistic. The preparations for the study took sic months; the collection of the follow-up data continued for over a year before it was halted; preparation of the data for analysis took six months; analysis and interpretation of the data took another six months, and the final report took two years to complete.

As the retuned questionnaires were received, they were screened for write-in entries and for unanswered questions. The responses were then punched with print option on data processing cards. Each card was proof-read rather than verified for accuracy.

The registrars at each of the five colleges and universities had been contacted early in the study to inform them about the study and to alert them that a request for transcripts would be made after transcript release forms had been obtained from the respondents. Each of the registrars was asked to reply with instructions for handling the request in the best way. In addition, each registrar was asked to specify the restrictions on the use of the transcript other than to insure the privacy of each of the students and to handle the data in confidence.

When the transcript release forms were received, they were accumulated and sent all at one time to the registrars at the colleges. As the transcripts were received, they were coded on a four-point scale (A=4, B=3, C=2, D=1, F=0).

A talley sheet of the progress with each person of the follow-up population prevented duplicate mailings and charted the progress of the study. In spite of precautions, two mailing errors were made. One of the errors resulted in a sharp note from the respondent refusing to complete a second questionnaire.

Treatment of the Data

Originally, plans for the follow-up study had called for extensive collection of data of a statistically continuous nature. The available statistical techniques would then have provided predictive schemes for success in early admission to college. The plans were changed because the pre-college information necessary for the predictive schemes would have had to come from as many high schools as there were early admittees and control students. The data under those conditions would likely have been non-uniform in content and derived by standardized test which would be very different. Such differences in the data would have precluded any pooling of the data to form the control and the experimental groups.

One of the problems of the follow-up study was the development of predivtive measures of student success. The research design had initially called for the use of multiple discriminant analysis to answer the question, "What characteristics differentiated the successful participants from the unsuccessful participants in the Early Admission Program?" The question remains unanswered for several reasons. Meaningful criteria of success were difficult to establish at the end of the program because success was ultimately dependent upon the interests and aspirations of the individual students. Too, the available indicators for success were largely auperficial assessments of success. Finally, most of the data were nominal or categorical, so that discriminant analysis and regression analysis were inappropriate. Much of the entecedent data was incomplete so that even dummy variables were impractical.

Personality, attitudinal, and scholastic inventories, which could have been part of the antecedent data bank for discriminant analysis and regression analysis, were not available. These inventories might have been obtained from as many high schools as there were participants in the Program. The considerable effort to obtain these inventories from the high schools was not made because there seemed little hope for consistency in the type of measures available. The available information on the experimental and control groups indicated that little differences would have been found.

Matched samples of the two groups were not used in the study. One attempt to form matched subsets of the experimental and control groups had shown a large reduction in the number of cases for the matched samples. The large reduction of cases made that approach to regression analysis also impractical. An analysis of covariance was performed but the findings indicated that the results did not differ significantly from the original uncorrected Chi-square results.

The plan actually used sought descrete or subjective data. The Chi-square test, an appropriate statistical test for discrete data, was used extensively in the treatment of the data obtained in the follow-up study.

A pre-determined .01 level of confidence was specified partly because of the unidentified bias represented by the 35% of the follow-up population which did not respond to the questionnaires. Also, the .01 level served as a safeguard for Chi-squares being random variables themselves since so many were calculated.

Because the assumptions underlying the use of the Chi-square test require sufficiently large cell frequencies (106, p.110), cells were merged whenever it was appropriate to merge them to meet the frequency requirement. The responses to all items of the follow-up questionnaire have been tabulated in Appendix G and provide an opportunity for cross-checking of the data which have been merged.

The data on grade point averages are treated in a somewhat unorthodox manner. Although the grade point averages are continuous in nature, they were tested with Chi-square. Initially, the data had been tested by the analysis of variance. The results had shown no significant differences at the .01 level between the control group and the experimental group. Tests on the homogeneity of the variances showed no significant differences, too. In retrospect, tha analysis of variance seemed not the most appropriate procedure because the data had been obtained from five different sources and had been generated through different methods and standards. Therefore, in an attempt to present the data in proper perspective, a less powerful test, the Chi-square test, was used with the data.

In the presentation of the findings of the follow-up study, a modification of standard statistical procedure is used. Under standard procedure,, each time a Chi-squre test is carried out, a null hypothesis is being tested. However, because of the large number of Chi-squares calculated, a single null hypothesis was identified and tested for several related items. From a statistical point of view, the modified procedure is proper because Chi-squares can be added together with appropriate correction on the degrees of freedom (64, p. 343).

Summary

The procedures of the follow-up study were designed to obtain answers from the control and experimental groups to the question, "What happened after college?" The procedures yielded data from two new sources, college transcripts and the follow-up questionnaires. Because the data from the follow-up questionnaires were categorical or discreet in nature, the Chi-square test for significant differences between the control and the experimental groups was used extensively.

Chapter 6

Analysis and interpretation of the Data of the Follow-up Study

The discussion of the data collected in the follow-up study of the Early Admission Program is presented in six sections, the first five of which are pre-college information, undergraduate information, graduate information, occupational information, and socioexonomic information. Each of the five sections tests a mull hypothesis of no significant differences between the control and the experimental groups. The sixth section of the discussion of the data examines the relationship between some of the pre-college and some of the post-college observed significant differences in socioeconomic information. The sixth section attempts to show that initial differences rather than early admission influenced some of the observed differences between the control and the experimental groups.

Pre-college Information

The discussion of pre-college information is concerned with the question, "How comparable were the control and the experimental groups?" The examination of data collected during the Program (see Chapter 4) had provided reasons for suspecting that the control group and the experimental group were significantly different in socioexonomic backgrounds. The data of the follow-up study confirmed significant socioeconomic differences between the two groups although many similarities were noted. The differences in socioeconomic backgrounds of the two groups suggest cautions in the interpretations of the results of the Early Admission Program. In particular, conclusions about the general effects of the Program on the experimental students, the academic performances of the experimental students, and the explanations for observed post-Program differences between the control and the experimental groups must distinguish between the effects of initial socioeconomic differences and the effects of the Program.

The null hypothesis under test is:

> There were no significant differences between the control group and the experimental group in socioexonomic backgrounds.

Table 6.01 displays the proportions of the control and experimental groups responding to four items about size of home community, type of a school attended, size of school, and family income. The Chi-square tests of the proportions of the responses of both groups to all four questions show no significant differences at the .01 level.

The responses recorded in Table 6.01 show that most of the students of both groups had come from urban home communities although 25% of both groups had come from communities of less than 25,000 population. The responses show that the groups were made up of students who, in general, had attended urban high schools in which the size of the senior class was less than 500 students. The responses also show that, in 1951, the incomes of the families of all but nine students in each group were over $4,000 per year with a median level at $8,000 per year.

The appearance of no significant differences between the groups in family incomes showed that the financial statuses of families were not differentiating factors. Under the Early Admission Program, financial support had been extended to all members of the experimental group. In some instances, financial support from private funds of the colleges was extended to the control group. In general, the control group received no financial support. Since the families of both groups were of

Table 6.01

Pre-college Information

Follow-up Questionnaire, 19

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 3					
Size of Home Community			4.2	4	NSD
1. Less than 25,000	33	41			
2. 25,000-50,000	15	8			
3. 50,000-100,000	16	18			
4. 100,000-500,000	14	19			
5. 500,000-up	42	58			
	120	144			
Item 4					
Type of Secondary School Attended			.2	1	NSD
1. Rural	20	22			
2. Urban	97	122			
	117	144			
Item 5					
Size of High School Senior Class			8.9	4	NSD
1. Less than 100	41	32			
2. 100-200	17	23			
3. 200-500	41	43			
4. 500-1,000	16	33			
5. 1,000-up	5	12			
	120	143			
Item 6					
Family Income in 1961			3.6	5	NSD
1. Less than $4,000	9	9			
2. $4,000-$5,999	22	27			
3. $6,000-$7,999	22	35			
4. $8,000-$9,999	24	21			
5. $10,000-$11,999	10	17			
6. $12,000-up	33	34			
	120	143			

---

[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

approximately the same financial status, the financial aid given to one group and withheld from the other seemed likely to affect the academic performances of the groups. The students of the less favored group would have to seek self-support through student employment and, thus, reduce the time available for studies.

Table 6.02 displays responses of both groups to the items on parental backgrounds. The Chi-square tests showed no significant differences at the .01 level between the groups on birthplace of father and of mother, on formal education of mother, and on the extent of employment of mother. Significant differences were observed between the two groups on the responses to religious affiliation of father and of mother, and to formal education of father.

Birthplace of parents had been included as items in the follow-up questionnaire because of an observation reported by Wagner (102, p. 204-205) of differences in the drive and persistence of the academically successful students whose parents were immigrants as compared with students whose parents were native-born Americans. If the colleges had been successful in matching the experimental and the control groups on academic abilities, drive and persistence might explain differences which might be found in academic performances. However, the Chi-square test showed no significant differences between the two groups on birthplaces of parents. Therefore, if differences were found in academic performances, they could be attributed to other causes.

Table 6.02 displays three significant differences between the control group and the experimental group in socioeconomic backgrounds. The responses showed that the two groups were significantly different in religious affiliations of parents and in formal educations of fathers. Larger proportions of the experimental group had indicated fathers (43%) and mothers (44%) of the Jewish faith as compared to proportions of the

Table 6.02

Pre-college Information

Follow-up Questionnaire, 1962

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 1					
Father's Birthplace			1.6	2	NSD
1. United States	94	105			
2. Europe	11	19			
3. Mexico or South America	0	0			
4. Russia	12	18			
5. Other[c]	3	2			
	120	144			
Item 2					
Father's Formal Education			15.3	3	SD
1. Some grade school[d]	8	8			
2. Finished grade school[d]	5	1			
3. Some high or trade school[d]	19	8			
4. Finished high or trade school[e]	9	19			
5. Some college, business or technical school[e]	26	21			
6. Finished business or technical school[e]	2	10			
7. Finished college	20	16			
8. Attended graduate or professional schools after college	30	61			
9. Do not know[c]	1	0			
	120	144			

(Table continued on next page)

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[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference
[c] Not included in calculation of Chi-square
[d] Adjoining cells merged for Chi-square
[e] Adjoining cells merged for Chi-square

Table 6.02 (Continued)

Item	Observed Responses Con.	 Exp.	X^2	df	Diff.[a,b]
Item 3 Father's Religious Affiliation			22.7	4	SD
1. None	16	17			
2. Protestant	64	49			
3. Catholic	11	10			
4. Jewish	20	62			
5. Other	10	6			
	121	144			
Item 4 Mother's Birthplace			.9	1	NSD
1. United States	104	118			
2. Canada	0	0			
3. Europe[c]	13	13			
4. Mexico or South America	0	0			
5. Russia[c]	2	12			
6. Other[c]	1	1			
	120	144			
Item 5 Mother's Formal Education			5.7	3	NSD
1. Some grade school[d]	3	3			
2. Finished grade school[d]	6	5			
3. Some high school[e]	14	7			
4. Finished high school[e]	28	33			
5. Some technical or business training after high school[e]	11	25			
6. Some college or finished junior college[e]	26	29			

(Table continued on next page)

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square.

[d] Adjoining cells merged for Chi-square.

[e] Adjoining cells merged for Chi-square.

Table 6.02 (Continued)

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 5 (Continued)					
7. Finished college	22	24			
8. Attended graduate or professional school after college	9	18			
9. Do not know [c]	1	0			
	120	144			
Item 6 Did your mother have a paying job when you entered college?			4.8	2	NSD
1. Worked full time	19	39			
2. Worked part-time	18	17			
3. Did not have a paying job	79	85			
4. Was not living[c]	3	3			
	119	144			
Item 7 Mother's Religious Affiliation			20.2	4	SD
1. None	7	11			
2. Protestant	71	49			
3. Catholic	14	14			
4. Jewish	25	63			
5. Other	4	7			
	121	144			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Not included in calculation of Chi-square.

control group. Larger proportions of the control group had indicated fathers (53%) and mothers (59%) who were Protestants.

The responses by the two groups on formal educations of fathers showed a large proportion of the experimental group (40) as compared with the control group (25%) had fathers who had attended graduate or professional schools after college. The responses also showed that the median level of education of fathers of the experimental group was graduation from college and the median level of education of fathers of the control group was graduation from high school with some post-high school studies.

A number of interpretations are possible to account for the observed differences between the two groups on formal educations of fathers. Fathers whose formal educations included graduate studies were more likely to understand the advantages offered by early admission to college and less likely to be swayed by the attacks on the Program in 1951. Too, such fathers very likely were the academic models that motivated the interests of the sons in the Program.

The Chi-square tests on the differences between the responses of the control and the experimental groups on family backgrounds indicated significant differences at the .01 level in formal educations of fathers, and in religious affiliations of mothers and fathers. Therefore, the null hypothesis of no significant differences between the control group and the experimental group in socioeconomic backgrounds is rejected. The rejection leads to the conclusionthat the control and the experimental groups were drawn from different socioeconomic populations.

Undergraduate Information

The discussion of pre-college information is concerned with answering the question, "Were the experimental students able to compete favorably with the control students in undergraduate academic performance?" Indications were already available that the experimental group were able to compete favorably with the control students in undergraduate academic ratings and in winning honors (42, 57, 58). The question was reexamined in the follow-up study because incomplete data had raised doubts about the conclusions which were drawn in the report of the Fund for the Advancement of Education in 1957 (58).

The follow-up study examined the relative stability of the choices of undergraduate major field of study, the academic performances of the two groups, and patterns of participation in student activities.

The null hypothesis under test is:

> There were no significant differences between the control group and the experimental group in undergraduate performance.

Table 6.03 displays the responses of the control and the experimental groups to six questions about participation in general activities in high school and in college. The six questions concern leadership roles, degree of personal involvement in activities, and the educational attainments of the personal peer groups. The Chi-square tests on the differences between the responses of the two groups show no significant differences except in participation in athletics.

The difference observed in athletics was somewhat anticipated since the experimental group had spent two years less time in high school than the control group. Therefore, the expermental group had that much less time to participate in athletics and almost no time for varsity athletics.

Approximately one-third of the respondents of both groups had served in leadership positions in undergraduate academic clubs. Also, approximately 15% of both groups had been elected to leadership posi-

Table 6.03

Undergraduate Information

Follow-up Questionnaire, 1962

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 1 Were you an officer in any undergraduate academic club?			2.4	1	NSD
1. No	82	85			
2. Yes	38	59			
	120	144			
Item 2 Are you, or have you ever been, an elected class officer in college?			.7	1	NSD
1. No	95	121			
2. Yes	24	23			
	119	144			
Item 3 Were you on any high school or city athletic teams?			16.8	1	SD
1. No	41	85			
2. Yes	79	58			
	120	143			
Item 4 Did you play in your college or high school band or orchestra?			1.5	2	NSD
1. No	89	97			
2. Both high school and college	13	21			
3. High school only	18	26			
4. College only	0	0			
	120	144			

(Table continued on next page)

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

Table 6.03 (Continued)

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 5 Have you ever been in any publicly performed plays while in college or in high school?			9.1	3	NSD
1. No	57	82			
2. Both high school and college	19	24			
3. High school only	41	28			
4. College only	3	10			
	120	144			
Item 6 How many of your friends are now in or have finished college?[c]			4.6	2	NSD
1. None[d]	2	1			
2. Only a few[d]	24	16			
3. Most of them	60	83			
4. All of them	34	40			
5. Do not know; lost contact	0	3			
	120	143			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] "Of the people about your own age with whom you spent most of your free time while in high school, how many of them are now in college or have finished college?"

[d] Adjoining cells have been merged for Chi-square

tions in student governments in college. These percentages indicated the similarity of leadership opportunities for both groups in college.

Items relating to musical performances in bands or orchestras or dramatic performances in plays were included in the questionnaire to provide some information about whether or not the experimental group tended to be seclusive and withdrawn from personal involvement in collegiate activities. The responses to the items by both groups showed large proportions of the experimental group with no participation in either music or the performing arts. A larger proportion of the control group had indicated participation in publicly performed plays than had the experimental group. However, the Chi-square test of the differences between the responses of both groups showed no significant differences at the .01 level between the responses of the two groups.

The last item in Table 6.03 provided some information about the peer groups of the control and the experimental groups. More than 80% of the control and the experimental groups had indicated that most or all of their personal friends in high school had entered college. The Chi-square test showed no significant differences at the .01 level between the responses of the two groups.

In general, the findings of no significant differences in pre-college and college student activities indicate that participation in the Program did not diminish opportunities for serving in leadership roles in college. In addition, the patterns of participation in pre-college and college activities were similar so that academic performance cannot be said to have been gained at the expense of other college functions.

The control and the experimental groups were asked to respond to the number of times they had changed their undergraduate major field of study. Of the respondents, 60% reported no changes (see Table 6.04). More of the students of the experimental group had indicated two or more changes, but the Chi-square test of the difference between proportions of the responses showed no significant differences at the .01 level.

The similarity of the responses of the control and experimental groups on changes in major fields of study indicated a stability of the choices of the experimental group although the choices were made two years early.

Table 6.05 displays the distribution of gradepoint averages for both groups. Because several students had been able to combine the four years of college into three, the number of seniors in the experimental group increased over the number of juniors of the preceding year. The table does not include the gradepoint averages of the Chicago group because a large number of students there had advanced through comprehensive examinations. Such students could not easily be classed, particularly between the junior and senior years. All gradepoint averages were computed to the nearest tenth.

As shown in Table 6.05, there were no significant differences between the distributions of the gradepoint averages of the two groups over the four-year period. The calculated Chi-squares for the freshmen and sophomore years were large but not significant at the .01 level.

Table 6.06 presents the scheme originally used for comparing the grade point averages of the control and the experimental groups. The standard deviations of the distributions and the means appear similar over the four-year period. The F statistics calculated from the variance ratios for the two groups for each year with an approximation to 160 degrees of freedom for the first two years showed no significant

Table 6.04

Undergraduate Information,

Follow-up Questionnaire, 1962

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 4 (Part IV) Number of Times Undergraduate Major Area of Study Changed			1.5	2	NSD
0. None	82	94			
1. 1	30	34			
2. 2[c]	5	11			
3. 3 or more[c]	3	5			
	120	144			

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[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference
[c] Adjoining cells merged for Chi-square.

Table 6.05

Undergraduate Information,

Academic Transcripts, 1951-54

Class	Gradepoint Averages[d]					X^2	df	Diff.[a,b]
	1.0- 1.9	2.0- 2.4	2.5- 2.9	3.0- 3.4	3.5- 4.0			
Freshman						10.6	4	NSD
Control	10	33	49	42	16			
Exp.	11	23	34	54	30			
Sophomore						12.8	4	NSD
Control	6	32	54	45	14			
Exp.	13	24	35	50	28			
Junior[c]						9.6	3	NSD
Control	7	25	45	42	21			
Exp.	4	10	31	36	32			
Senior[c]						6.33	3	NSD
Control	2	13	48	47	26			
Exp.	4	13	[illegible]	44	32			

---

[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] 1.0-1.9 range merged with 2.0-2.4 range for Chicago [illegible].

[d] Because of the large number of students who progressed by comprehensive examinations, the Chicago group is not included in the grade-point averages.

Table 6.06

Undergraduate Information,

Academic Transcripts, 1951-54

Gradepoint Averages[a]	Class							
	Freshman		Sophomore		Junior		Se	
	Con.	Exp.	Con.	Exp.	Con.	Exp.	Co	
1.0-1.4	0	2	1	2	1	0	0	
1.5-1.9	10	9	5	11	6	4	[illegible]	
2.0-2.4	33	23	32	24	25	10	1	
2.5-2.9	49	34	54	35	45	31	48	[illegible]
3.0-3.4	42	54	45	50	42	36	47	[illegible]
3.5-4.0	16	30	14	28	21	32	26	3
N (Con)	150		151		140		13	
N (Exp)		152		150		113		11
Mean (Con)	2.8		2.9		3.0		3.3	
Mean (Exp)		3.1		3.1		3.4		3.
Variance (Con)	.292		.250		.30		.230	
Variance (Exp)		.366		.381		.280		.301

(Table continued on next page)

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[a] Because of the large number of students who progressed by comprehensive examinations, the Chicago group is not included in the gradepoint averages.

Table 6.06 (Continued)

	Class						
	Freshman		Sophomore		Junior		
	Con.	Exp.	Con.	Exp.	Con.	Exp.	
Standard deviation (Con)	.54		.50		.55		.4[illegible]
Standard deviation (Exp)		.60		.62		.53	
F ratios	1.25		1.52		1.08		[illegible]
df	151/149		150/149		139/112		
t for Means[a,b]	.50 NSD		.32 NSD		.75 NSD		

[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference

differences at the .01 level. Therefore, the two sets of distributions can be said to be homogeneous. The t-test on the means of the distributions of the two groups for each year showed no significant differences at the .01 level. Therefore, it can be concluded that there were no significant differences between the academic performances of the control group and the experimental group as based on gradepoint averages.

The findings of the follow-up study on the undergraduate activities of the control and the experimental groups do not support a decision to reject the null hypothesis that there were no significant differences between the control group and the experimental group on undergraduate performance. Because the null hypothesis cannot be rejected, it can be concluded that the experimental group had performed as well as the control group in college in academic and non-academic activities.

Graduate Information

The discussion of graduate information is concerned with answering the question, "Were the experimental students able to compete favorably with the control students for positions in graduate schools of their choices?" The report of the Fund in 1957 had indicated that large numbers of the experimental students had planned to continue their educations into graduate schools. The follow-up study was concerned with what had actually happened by 1962. Entrance into graduate school, choice of graduate school, degree earned, and relative stability of choice of area of specialization were examined in the follow-up study.

The null hypothesis under test is:

> There were no significant differences between the control group and the experimental group in the attainment of choices of and entrances into graduate schools.

Table 6.07 displays the responses of both groups to the number of times graduate major area of study was changed. A significant difference at the .01 level was observed between the responses of the two groups. Because the item had combined the responses of the members of both groups who had attended graduate schools with the responses of the members of both groups who had not attended graduate school, the item is treated in two parts (see Tables 6.08 and 6.09).

Table 6.08 shows that, of the respondents of the follow-up study, a larger proportion of the experimental group (90%) as compared with the control group (73%) had attended graduate schools. The difference tested by Chi-square was significant at the .01 level.

Among the students who had attended graduate schools, no significant differences were observed in the number of times graduate major area of study was changed. The data (see Table 6.09) attest to the comparable stability of the choices of the experimental group and of the control groups.

Entrance into graduate school was not a sufficient test for the null hypothesis. Each of the students who was in the experimental group or in the control group had been carefully selected for high ability, high aptitude, and high academic promise. Such students were very likely to succeed in gaining entrance into graduate schools. Therefore, two other conditions were imposed—that the students had entered graduate schools of their choices and that the students had completed graduate studies and earned graduate degrees.

Table 6.10 shows that there were no significant differences between the responses of the control and the experimental groups in attainment of choices of graduate schools for studies leading to the degrees of Master of Arts, Bachelor of Laws, and other degrees of

Table 6.07

Graduate Information,

Follow-up Questionnaire, 19[illegible]

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 5 (Part IV) Number of Times Graduate Major Area of Study was Changed			14.6	2	SD
0. None	78	10[illegible]			
1. 1[c]	6	17			
2. 2[c]	2	3			
3. 3[c]	1	1			
4. Did not attend graduate school	32	14			
	119	143			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square

Table 6.08

Graduate School Versus Non-Graduate School Attendance

Group	Observed Responses		X^2	df	Diff.[a,b]
	0-3[c]	4			
Total			6.6	1	SD
Control	87	32			
Exp.	129	14			

[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference
[c] Sum of first four responses of both groups in Table 6.07.

Table 6.09

Number of Times Graduate Major Area of Study Changed For Those Who Attended Graduate School

Group	Observed Responses[c]				X^2	df	Diff.[a,b]
	None	1[d]	2[d]	3[d]			
Total					1.2	1	NSD
Control	78	6	2	1			
Exp.	108	17	3	1			

[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference
[c] Responses from Table 6.07 excluding responses to 4.
[d] Adjoining cells merged for Chi-square

Table 6.10

Graduate Information, Follow-up Questionnaire, 1962

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 1 (Part IV) Choice of Graduate School for Master of Arts, Bachelor of Law, etc.			.5	1	NSD
1. First choice	54	68			
2. Second choice[c]	6	8			
3. Other choice[c]	1	5			
	61	81			

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[a] Level of confidence .01

[b] NSD No significant differences; SD Significant differences

[c] Adjoining cells merged for Chi-square

similar nature and stature. Similarly, there were no significant differences between the responses of both groups to attainment of choices of graduate schools for studies leading to professional or academic doctorates (see Tables 6.11 and 6.12).

By 1962, only nine of the respondents had not yet completed their graduate studies.

The null hypothesis that there were no significant differences between the control group and the experimental group in attainment of choices of and entrance into graduate schools is rejected. Significantly more experimental students than control students had entered graduate schools. Moreover, the experimental students and the control students who did enter graduate schools had indicated in comparable proportions their attainment of first choices of graduate schools and the stability of their selections of major fields of study.

The experimental students are examined in the sixth section using stratification techniques for controlling the effects of pre-college differences in socioeconomic backgrounds on the observed significant differences in graduate activities between the two groups.

Occupational Information

The discussion of occupational information is concerned with answering the question, "Did the experimental students have post-graduate occupational activities similar to the activities of the control students?" The follow-up questionnaire sought information on the occupational activities from both groups. The items of the follow-up questionnaire seemed biased toward the respondents whose occupations were among the academic professions. The bias was partly accidental because it was related to success criteria, which were biased inadvertently because of the academic background of the principal in-

Table 6.11

Graduate Information,

Follow-up Questionnaire, 1962

Item	Observed Responses		x^2	df	Diff.[a,b]
	Con.	Exp.			
Item 2 (Part IV) Choice of Graduate School for Professional Doctorate			12	1	NSD
1. First Choice	21	30			
2. Second Choice[c]	1	5			
3. Other Choice[c]	2	6			
	24	41			

[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference
[c] Adjoining cells merged for Chi-square

Table 6.12

Graduate Information,

Follow-up Questionnaire, 1962

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 3 (Part IV) Choice of Graduate School for Academic Doctorate			.2	1	NSD
1. First choice	16	39			
2. Second choice[c]	3	5			
3. Other choice[c]	2	4			
	21	48			

[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square

vestigator of the follow-up study. The success criteria were discarded but the items of the follow-up questionnaire were retained. The deliberate part of the bias occured because of the attempt to identify the continued scholarly interests of both groups since large numbers of students had indicated intentions to pursue (42, 58) and, subsequently, had completed graduate studies.

The null hypothesis under test is:

> There were no significant differences between the control group and the experimental group in occupational attainments and activities.

The null hypothesis was tested by assessing the overall effect of the Chi-square tests on the differences between the responses of the control group and the experimental group on broad categories of primary occupational status, description of levels of occupational positions, number of different positions held since earning highest collegiate degrees, extent of research and publications, and the extent of participation in professional organizations.

The responses of the two groups to the broad occupational categories are recorded in Table 6.13. The table includes a write-in item for nine respondents who were students in graduate schools at the time they completed the follow-up questionnaire. The occupational categories were prepared after a study of the occupations of parents in the 1953 survey of the Early Admission Program had indicated the difficult task of making sense out of specific occupations.

The responses tabulated in Table 6.13 show that both groups were engaged predominatly in professional occupations and that a large proportion of the experimental group (45%) were connected with schools and colleges. Unfortunately, an oversight in the preparation of the item prevents distinguishing between the experimental students who were con-

Table 6.13

Occupational Information,

Follow-up Questionnaire, 1962

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 1 (Part VI)					
Primary Occupational Status--Professional			8.9	4	NSD
1. Self-employed	13	14			
2. Industrial	30	33			
3. Academic	36	61			
4. Government service	16	20			
	95	128			
Primary Occupational Status--Non-professional[c]					
1. Self-employed	8	0			
2. Industrial	5	5			
3. Private group	7	2			
4. Government service	1	1			
	21	8			
Primary Occupational Status--Student[c]	3	6			
Primary Occupational Status--Professional	95	128	7.9	1	SD
Primary Occupational Status--Non-professional	21	8			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] All responses merged for Chi-square.

nected with colleges and those who were connected with schools.

The Chi-square test of the difference between the proportions of the control and the experimental groups in each of the occupational categories indicated no significant difference at the .01 level. A further test showed that, when the observed responses were grouped into only two categories of professional and non-professional occupations, there was a significant difference at the .01 level between the control group and the experimental group in general occupational status. A significantly larger proportion of the experimental group (94%) as compared with the control group (82%) was engaged in professional occupations at the time they completed the questionnaires in 1962.

Responses by both groups to levels of the positions they held at their current places of employment are displayed in Table 6.14. The responses are numbered one through four and correspond to the following:

1. Upper level of the organization
2. Junior level of the organization.
3. Lower level of the organization.
4. None of the above

The last item was included for persons who were unemployed, were students, or were persons who felt that their positions were not clearly related to the organizational structure or hierarchy of their places of employment.

The data recorded in Table 6.14 indicate a comparable rate of advancement of the control and the experimental groups in their current places of employment. The proportions of both groups center on the places of employment. The proportions of both groups center on the junior level of the organization. The Chi-square test showed no significant differences at the .01 level between the responses of both groups to levels of positions.

Table 6.14

Occupational Information,

Follow-up Questionnaire, 1969

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 2 (Part VI) Level of current position in place of employment			8.7	3	NSD
1. Upper	27	17			
2. Junior	68	88			
3. Lower	18	22			
4. None	5	16			
	118	143			

[a] Level of confidence .01

[b] NSD Non-significant difference; SD Significant difference

Table 6.15 displays the responses of the control and the experimental groups to number of different positions held since graduation with highest degree. The responses indicated occupational mobility for both groups. The Chi-square test showed no significant differences at the .01 level between the responses of the two groups to occupational mobility.

As an indication of the directions of post-graduate occupational activities, each respondent was asked to specify the number of research projects in which he was a direct participant. The responses, displayed in Table 6.16, showed participation in a greater number of research projects by the experimental group (72%) as compared with the control group. The Chi-square test showed that the difference was significant at the .01 level. Since significantly more of the experimental group than the control group had entered professions which placed them in public schools and colleges, the finding of significant differences in the responses by both groups to research activities was not surprising.

As shown in Table 6.17, the control group and the experimental group responded in similar ways to the extent of publications, membership in professional organizations and subscriptions to professional journals. The differences between the responses of the two groups were not significant at the .01 level. In general, both groups had indicated memberships in professional organizations and subscriptions to at least one professional journal. Of some interest is the response by 43% of the experimental group that they had already become active in writing and publishing articles in professional journals.

The null hypothesis that there were no significant differences between the control group and the experimental group in occupational attainments and activities is rejected primarily because of the observed significant difference at the .01 level between the two groups on pro-

Table 6.15

Occupational Information,

Follow-up Questionnaire, 1962

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 7 (Page 17) Number of Different Positions held since Graduation with Highest Degree			1.2	4	NSD
0. None	8	12			
1. 1	46	57			
2. 2	35	46			
3. 3	20	20			
4. 4 or more	10	9			
	119	144			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

Table 6.16

Occupational Information,

Follow-up Questionnaire, 196[illegible]

Item	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 4 ([illegible]) Number of Research Projects Directly Participated in			11.9	3	SD
0. None	58	41			
1. 1 or 2	28	43			
2. 3 to 5	21	34			
3. 6 to 8[c]	4	5			
4. More than 8[c]	8	19			
	119	142			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square

Table 6.17

Other Occupational Information,

Follow-up Questionnaire, 1962

Item (Part VII)	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 1					
Number of Books Published to Date			.5	1	NSD
0. None	117	138			
1. 1	3	6			
2. More than 1	0	0			
	120	144			
Item 2					
Number of Articles Contributed to Journals			4.2	4	NSD
0. None	74	82			
1. 1	22	20			
2. 2	9	13			
3. 3	5	10			
4. 4 or more	9	19			
	119	144			
Item 3					
Number of Professional Organizations to Which You Belong			7.6	4	NSD
0. None	41	31			
1. 1	34	52			
2. 2	23	31			
3. 3	13	15			
4. 4 or more	9	15			
	120	144			

(Table continued on next page)

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[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference

Table 6.17 (Continued)

Item	Observed Responses Con.	Observed Responses Exp.	X^2	df	Diff.[a,b]
Item 5					
Number of Subscriptions to Professional Journals			7.5	5	NSD
0. None	25	29			
1. 1	35	33			
2. 2	28	22			
3. 3	13	23			
4. 4	7	13			
5. 5 or more	12	24			
	120	144			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

fessional and non-professional occupational status. Larger proportions of the experimental as compared with the control group had entered the professions. Excluding the significant difference observed for extent of articles published, there were no significant differences between the two groups in occupational levels attained, in occupational mobility, and in occupational activities.

Socioeconomic Information

The discussion of socioeconomic information is concerned with answering the question, "Did the experimental group have post-graduate socioeconomic activities similar to the activities of the control group?" Significant differences between the control group and the experimental group in religious affiliation of both partnes and in the educational backgrounds of fathers were observed and reported in Chapter 4 (See Table 4.05). The differences were indicative of similar socioeconomic differences between the two groups in the post-college period. Therefore, the follow-up study sought information similar to that already available on the parents of both groups.

The null hypothesis under test is:

> There were no significant differences between the control group and the experimental group in post-college socioeconomic activities.

The follow-up questionnaire contained items about marital status, educational backgrounds of wives, number of children, current home community size, community service, religious affiliation, current income, and estimates of current financial wealth. The responses to the ten items of social information appear in Table 6.18. Responses to the four items of economic information appear in Table 6.19.

On social information, the Chi-square tests of the differences between the responses of the control and the experimental groups showed

Table 6.18

Social Information,

Follow-up Questionnaire, 1962

Item (Part V)	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 1					
Marital Status			.8	1	NSD
1. Single	27	39			
2. Married	92	102			
3. Widowed	0	0			
4. Divorced or Separated[c]	1	3			
	120	144			
Item 3					
Educational Background of Wife in years of schooling			1.5	3	NSD
1. 12	9	8			
2. 13-14	16	13			
3. 15-16	41	49			
4. 17-18[d]	24	23			
5. 19-20[d]	2	5			
6. More than 20[d]	0	7			
	92	105			
Item 4					
Highest Degree Earned by Wife			5.7	2	NSD
1. None	32	26			
2. Bachelor's degree	49	55			
3. Master's degree or Higher[e]	10	20			
4. Other[f]	0	4			
	91	105			

(Table continued on next page)

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Merged with Single for Chi-square.

[d] Adjoining cells merged for Chi-square.

[e] Includes six experimentals whose wives hold doctorates.

[f] Includes RN and Junior College Certificates.

Table 6.18 (Continued)

Item (Part V)	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 2					
Number of Children			14.3	4	SD
1. None	20	46			
2. 1	26	28			
3. 2	29	19			
4. 3	13	6			
5. 4	5	4			
6. More than 4	0	0			
	93	103			
Item 5					
Residence			6.9	3	NSD
1. Single house	61	50			
2. Duplex section	8	12			
3. Apartment in building with less than 10 apartments	22	34			
4. Apartment in building with more than 10 apartments	27	45			
5. Dormitory[d]	1	1			
	119	142			
Item					
Size of Home Community			2.4	4	NSD
1. Less than 25,000	30	26			
2. 25,000 to 50,000	12	18			
3. 50,000 to 100,000	10	12			
4. 100,000 to 500,000	12	18			
5. 500,000 and up	55	69			
	119	143			

(Table continued on next page)

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square.

[d] Respondents were students. Not included in Chi-square.

Table 6.18 (Continued)

Item (Part V)	Observed Responses Con.	 Exp.	X^2	df	Diff.[a,b]
Item 7					
Membership in Service Organizations (Lions, Kiwanis, etc.)			2.3	2	NSD
0. None	97	124			
1. 1	15	10			
2. 2[c]	5	6			
3. 3[c]	2	3			
4. More than 3	0	0			
	119	143			
Item 8					
Have you been an officer in such organizations?			.2	1	NSD
1. No	109	132			
2. Yes	10	10			
	119	142			
Item 9					
Number of Elective Positions held in Community			.4	1	NSD
0. None	109	136			
1. 1[c]	8	3			
2. 2[c]	2	2			
3. 3[c]	0	3			
4. More than 3	0	0			
	119	144			
Item 10					
Religious Affiliation			[illegible]	3	SD
1. None	27	59			
2. Protestant	55	26			
3. Catholic	13	12			
4. Jewish	21	41			
5. Other	4	5			
	120	143			

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square.

no significant differences at the .01 level on eight of the ten items in Table 6.18. No significant differences were observed in marital status, educational background of wife, highest degree earned by wife, type of current residence, and size of home community. Also, no significant differences at the .01 level were observed between the responses of the two groups to membership in community service organizations, to having been an officer in community service organizations, and to serving in an elective position in current home community. Significant differences at the .01 level were observed on two items—number of children and religious affiliation.

The data on marital status (see Table 6.18) show large proportions of both groups were married. Only four respondents—one control and three experimental subjects—had indicated that they were divorced or separated. In general, the two groups had attained comparable marital statuses, although the men in the experimental group were two years younger than the men in the control group. Among the respondents who were married, each had indicated a wife who had graduated from high school. In addition, 75% of the experimental group and 65% of the control group had indicated wives who were college graduates.

Larger proportions of the married respondents of the experimental group (45%) as compared with the control group (21%) had reported no children in 1962. The difference in number of children was tested by Chi-square and found to be significant at the .01 level.

The responses of the two groups to places of residence indicate that similar proportions of each group lived in single or duplex homes and in apartments. In additions, large proportions of the experimental group (70%) and the control group (65%) lived in urban areas of population 50,000 or more. The Chi-square test on both items showed no significant differences at the .01 level (see Table 6.18). The two on type of home residence and size of home community were included in the follow-up questionnaire to detect extent of mobility of the control and experimental groups from rural to urban areas. A comparison of the data in Table 4.05 and Table 6.18 showed that, in 1951, approximately 50% of both groups had come from urban areas of over 100,000 and that, in 1962, 61% of the experimental group and 56% of the control group lived in urban areas of over 100,000 population. A mobility seems indicated but the evidence is inconclusive because there is no way of determining how many of the respondents in each case were the same people.

Three items of the questionnaire provided clues to the extent of community service performed through service organizations or elective offices by both groups in their home communities. The responses (see Table 6.18) showed that most of the respondents reported no activity. The Chi-square test of the differences between the responses of the control and the experimental groups to community service were not significant at the .01 level.

Significant differences were observed between the responses of both groups to religious affiliations. The frequencies of the responses to religious affiliations exceed the frequencies shown in Table 6.02 for religious affiliations of fathers and seem more consistent with the religious affiliations of mothers. Larger proportions of the respondents of both groups saw themselves with no religious affiliations than did their parents.

The Chi-square test on the differences between the responses of the control and the experimental groups to value of property acquired but not through inheritance showed significant differences at the .01 level. No significant differences were observed between the responses of the two groups on current salary range, range of property owned, and value of property inherited (see Table 6.19).

Because no explanation was given in the questionnaire on the intended distinction between personal property and other property, the data are ambiguous. The intended distinction was the separation of the assessment of property associated with personal living from the assessment of property of accumulated wealth, such as stocks and bonds. The two items relating to property could have been combined to resolve the ambiguity. They were not combined because a significant difference between the two groups was observed for real and personal property.

In 1962, both groups had indicated high earning power with 68% of the experimental group and 76% of the control group reporting annual incomes of $6,000 per year or higher. Accumulated wealth appeared similar for both groups.

The difference observed in personal and real property between the two groups stemmed from more respondents of the experimental group (15%) than of the control group (9%) reporting no property and less of the experimental group (4%) than of the control group (16%) reporting property valued at $20,000 or more.

The null hypothesis that there were no significant differences between the control group and the experimental group in socioeconomic activities is rejected because of the observed significant differences in the religious affiliations of the two groups and the significant differences in acquired real and personal wealths of the two groups.

One Pattern of Observed Differences

The analysis of the follow-up data in the preceding five sections showed significant differences on several items which seemed related in two patterns. The first pattern was the relationship between the

Table 6.19

Economic Information,

Follow-up Questionnaire, 1962

Item (Part VI)	Observed Responses Con.	Observed Responses Exp.	X^2	df	Diff.[a,b]
Item 4					
Current Salary Range			3.2	5	NSD
1. Less than $4,000	10	19			
2. $4,000-$5,999	19	26			
3. $6,000-$7,999	39	46			
4. $8,000-$9,999	22	23			
5. $10,000-$11,999	19	15			
6. $12,000-up	11	12			
	120	141			
Item 5					
Range of Value of Personal and Real Property Acquired (but not through inheritance) since graduation with latest degree			14.8	3	SD
1. None	10	21			
2. Less than $10,000	63	95			
3. $10,000-$19,999	23	20			
4. $20,000-$29,999[c]	13	6			
5. $30,000-up[c]	6	0			
	115	142			
Item 6					
Range of Value of Property Inherited			7.7	2	NSD
1. None	92	125			
2. Less than $10,000	11	10			
3. $10,000-$19,999[c]	3	2			
4. $20,000-$29,999[c]	3	2			
5. $30,000-up[c]	10	2			
	119	141			

(Table continued on next page)

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square.

Table 6.19

Economic Information,

Follow-up Questionnaire, 1962

Item (Part VI)	Observed Responses Con.	Observed Responses Exp.	X^2	df	Diff.[a,b]
Item 4 Current Salary Range			3.2	5	NSD
1. Less than $4,000	10	19			
2. $4,000-$5,999	19	26			
3. $6,000-$7,999	39	46			
4. $8,000-$9,999	22	23			
5. $10,000-$11,999	19	15			
6. $12,000-up	11	12			
	120	141			
Item 5 Range of Value of Personal and Real Property Acquired (but not through inheritance) since graduation with latest degree			14.8	3	SD
1. None	10	21			
2. Less than $10,000	63	95			
3. $10,000-$19,999	23	20			
4. $20,000-$29,999[c]	13	6			
5. $30,000-up[c]	6	0			
	115	142			
Item 6 Range of Value of Property Inherited			7.7	2	NSD
1. None	92	125			
2. Less than $10,000	11	10			
3. $10,000-$19,999[c]	3	2			
4. $20,000-$29,999[c]	3	2			
5. $30,000-up[c]	10	2			
	119	141			

(Table continued on next page)

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[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

[c] Adjoining cells merged for Chi-square.

Table 6.19 (Continued)

Item (Part VI)	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
Item 7 Range of Value of Other Property Owned			2.9	2	NSD
1. None	71	72			
2. Less than $10,000	31	51			
3. $10,000-$19,999[c]	3	13			
4. $20,000-$29,999[c]	4	3			
5. $30,000-up[c]	8	2			
	117	141			

---

[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference
[c] Adjoining cells merged for Chi-square

the occupations and formal educations of fathers and the graduate activities, career choices, and acquired wealth of the control and the experimental groups. The second pattern was the relationship between the religious affiliations of parents and the religious affiliations of the two groups as well as the number of children in the families of the groups. Only the first pattern is examined in the present section.

The control and the experimental groups were each sub-divided into sub-groups on the basis of educational backgrounds of fathers (see Table 6.20). The sub-groups were formed by controlling on educations of fathers rather than on occupations of fathers because adjoining cells in education could be merged, if necessary, more readily than occupations to meet the requirements for cell frequencies for testing by Chi-square.

In the section on graduate information, the data showed significantly more members of the experimental group than of the control group had entered graduate schools. In the sub-groups of the control and the experimental groups whose fathers had not graduated from college (see Table 6.21), there were no significant differences at the .01 level between the sub-groups in entrance into and graduation from graduate schools.

Table 6.22 displays the responses of the sub-groups of both the control and the experimental groups whose fathers had graduated from college. The Chi-square test showed significant differences between the two groups at the .01 level. Larger proportions of the experimental sub-group (95%) as compared with the control sub-group (76%) had entered and graduated from graduate schools. Whatever effects the educational backgrounds of fathers had on the sons, the significant differences which appeared despite the equalized backgrounds of fathers imply that other factors must be examined.

Table 6.20

Sub-groups of the Control Group and the Experimental Group

Stratified on Formal Educations of Fathers

(1951 Group)[a]

Educations of Fathers	Control Group	Experimental Gro
Up to but not including graduation from high school	31	17
High school graduation and some post-high school studies	37	45
Graduation from college	19	16
Graduate or professional schools	30	56
Totals	117	134

[a] Data are from the Follow-up Questionnaire, 1962, and appear also as Item 2 of Table 6.02. The totals of Table 6.20 are slightly less than for Table 6.02 because information on the specific variables (see Tables 6.21-6.24) examined with the stratified populations was not available for a few respondents.

Table 6.21

Graduate School Attendance of Control and Experimental Students Whose Fathers Were not College Graduates

(1951 Group)

	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
			2.9	1	NSD
Attended graduate school	48	53			
Did not attend graduate school	19	9			
No data available	1	0			
Totals	68	62			

Table 6.22

Graduate School Attendance of Control and Experimental Students Whose Fathers Were College Graduates

(1951 Group)

	Observed Responses		χ^2	df	Diff.[a,b]
	Con.	Exp.	7.4	1	SD
Attended graduate school	37	67			
Did not attend graduate school	12	4			
No data available	0	1			
Totals	49	72			

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[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference

The data support the conclusion that the control and the experimental groups differed significantly in graduate activity and that the difference is not wholly attributable to pre-college differences in socioeconomic background. By implication, it follows that early admission to college was in part responsible for some of the observed differences.

The significant differences in acquired property which were observed and reported in an earlier section of the present chapter disappeared when the groups were stratified and compared. The proportions were higher in favor of the control group, but the Chi-square test showed no significant differences at the .01 level in acquired property (see Table 6.23 and 6.24).

The data of the sub-groups support the conclusion that the observed significant differences between the control group and the experimental group in property acquired is attributable to pre-college differences in socioeconomic status. Therefore, the apparent disadvantage of the experimental group is not attributable to participation in the Early Admission Program.

Summary

The analysis of the data on pre-college information, undergraduate information, graduate information, occupational information, and socioeconomic information showed many similarities and several differences between the activities of the control group and the experimental group. The strategy of the analysis was to identify any disadvantages which the experimental group encountered as a result of participation in the Program. The null hypothesis which were tested were consistent with the strategy; therefore, the hypotheses were not sensitive to the degree to which the data favored the experimental group. The findings seemed conclusive that the experimental group had gained two years over

Table 6.23

Property Acquired by Control and Experimental Students

Whose Fathers Were not College Graduates

(1951 Group)

	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.			
			4.4	2	NSD
None	5	9			
Below $10,000 in value	37	38			
$10,000 and higher in value	26	14			
No data available	0	1			
Totals	68	62			

[a] Level of confidence .01

[b] NSD No significant difference; SD Significant difference

Table 6.24

Property Acquired by Control and Experimental Students Whose Fathers Were College Graduates

(1951 Group)

	Observed Responses		X^2	df	Diff.[a,b]
	Con.	Exp.	6.8	2	NSD
None	4	11			
Below $10,000 in value	24	45			
$10,000 and higher in value	21	15			
No data available	0	1			
Totals	49	72			

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[a] Level of confidence .01
[b] NSD No significant difference; SD Significant difference

its chronological peer group in their formal educations with no observable ill-effects in the post-college period.

Chapter 7

Conclusion

The reexamination of the Early Admission Program was motivated initially by the large number of young men in the experimental group who had indicated preferences for careers in sicence (see Appendix F). The Program had seemed an excellent opportunity to examine the development of scientific careers. However, the inadequacies of the research plan of the Program brought out two other objectives. By 1962, sufficient time had elapsed so that graduate school activities, occupational activities and socioeconomic activities of the control and the experimental groups could be examined. It seemed interesting and reasonable to ask, "What happened to the early admittees after college?" Too, it seemed worthwhile to examine the outcomes of a multi-million dollar effort for successes and limitations. Therefore, instead of examining the extent to which the early admittees adhered to and were successful in attaining careers in science, the follow-up study examined the long-range effects of academic acceleration and evaluated the Early Admission Program as a large scale innovation in education.

By 1962, when the follow-up study begun, it had been limited to the young men who, in 1951, had entered the University of Chicago, Columbia University, Oberlin College, the University of Wisconsin and Yale University. To examine the long-range effects of academic acceleration, the early admittees were contacted by mail and asked to respond to a questionnaire about their activities after they left the undergraduate colleges. The responses of the experimental group were compared to the responses of the control group, which had also been contacted by mail and asked to respond to the same questionnaire, under the assumption that the responses of the control group were the reasonable post-college activities for both groups.

The second objective, the evaluation of the Program as a large scale innovation in education, extended the follow-up study beyond the comparison of the activities of two groups of young men. The Early Admission Program could have had significant contributions toward expanding the research-based policies and procedures on academic acceleration in education, but the shortcomings of the underlying research plan limited the applicability of the outcomes of the Program.

Data for the follow-up study came from three sources: (1) The questionnaires used in 1953 and in 1955 when the Program was under way, (2) the academic transcripts of the young men of both groups, and (3) the follow-up questionnaire. The Educational Testing Service of Princeton, New Jersey, made available to the follow-up study the four questionnaires which were used during the Program with the 1951 group. Two of the questionnaires had been completed by the students; the first when the students were sophomores and the second when the students were seniors. The third and fourth questionnaires were completed by the colleges at the corresponding times, that is, during the sophomore and senior years of the students. These four questionnaires provided the data which were discussed in Chapter 4.

The academic transcripts from five different institutions with five possibly different standards of measurement provided the data for comparing the academic performances of the control and the experimental groups.

Approximately 65% of both groups responded to the follow-up questionnaire. The characteristics of the non-respondents were unknown so that the bias represented by their non-response to the questionnaire is a major limitation of the follow-up study.

Summary of Findings

1. The null hypothesis that there were no significant differences between the control group and the experimental group in socioeconomic background was rejected. Of the five items obtained from the earlier questionnaires, three items showed significant differences at the .01 level (see Table 7.01). The first of these items, rank in high schools may be discounted because they were not comparable; the experimental group had been ranked in the tenth grade and the control group in the twelfth grade. The other two items indicated socioeconomic differences. More of the control group had attended non-parochial private schools. More of the experimental group had fathers whose occupations were professions.

Three of the 17 items of pre-college information of the follow-up questionnaire concurred with the indications of socioeconomic differences indicated by the earlier questionnaires. The responses to the follow-up questionnaire showed significantly more fathers of the experimental group as compared with the control group had attended graduate or professional schools. In addition, there were significantly more parents of the experimental group whose religious affiliation was Jewish. The parents of the control group were predominantly Protestants (see Table 7.02).

A fourth item which showed significant difference between the two groups was participation in athletics. The difference is partly attributable to the early withdrawal from high school of the experimental group.

The null hypothesis was rejected because of the seven significant differences observed on 20 different items on pre-college information. Therefore, it can be concluded that the groups were drawn from significantly different socioeconomic populations.

2. The null hypothesis that there were no significant differences

Table 7.01

Summary of Findings--ETS Questionnaires, 1953-55

No significant difference[a]	Significant difference[b]
Pre-college Information	
1. Size of home community	1. Percentile ranking in high school
2. Size of high school senior class	2. Type of high school (public, private, or parochial) attended
3. Mother's occupation	3. Father's occupation
Undergraduate Information--Rated by Colleges	
1. Participation in athletics	1. Membership in fraternities or social clubs
2. Number of offices held	2. Physical health rating
3. Extent of dating	
4. Adjustment to college life	
5. Popularity rating	
6. Mental health rating	
Undergraduate Information--Responses by Students	
1. Initial career preferences	1. Number of hours working
2. Choices of fields of study	
3. Number of hours studying	
4. Number of hours in recreation	
5. Extent of dating	
6. Handicapped by insufficient high school preparation	
7. Value of college experience	
8. Value of courses taken	
9. Number of teachers who took interest in students	

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[a] Chi-square test for significant differences with .01 level of confidence.

Table 7.02

Summary of Findings--Follow-up Questionnaire, 1962

No significant difference[a]	Significant difference[a]
Pre-college Information	
1. Size of home community	1. Father's formal education
2. Type of high school attended	2. Father's religious affiliation
3. Size of high school senior class	3. Mother's religious affiliation
4. Family income	4. Participation in athletics
5. Father's birthplace	
6. Mother's birthplace	
7. Mother's formal education	
8. Mother's occupation	
9. Officer in college club	
10. Officer in college class	
11. Participated in band or orchestra	
12. Performed in plays	
13. Educational background of peer group	
Undergraduate Information	
1. Times changed major area of study	
2. Gradepoint averages	
Graduate Information	
1. Number of times changed major	1. Attendance in graduate school
2. Choice of MA graduate school	
3. Choices of Doctorate programs	
Occupational Information	
1. Occupational position	1. Primary occupational status--
2. No. of positions held	2. Research projects
3. Books published	
4. Articles published	
Socioeconomic Information	
1. Marital status	1. No of children
2. Educ. of wife	2. Religious affiliation.
3. Degrees earned by wife	3. Range of property acquired.
4. Type of residence	
5. Size Community	
6. Membership--service organizations	
7. Officer--service organizations	
8. Elective position on fighting	
9. Range of Prop. inherited	
10. Range of other Property	
11. Current salary range	

[a] Chi-square test used extensively at the .01 level.

between the control group and the experimental group in undergraduate performance could not be rejected. The tests of eight items of undergraduate activities from the original questionnaires, one item from the follow-up questionnaires, and the comparison of the gradepoint averages of the two groups resulted in only one significant difference—the control group had spent more time in student employment than had the experimental group. The difference in time spent in employment was attributable to the lack of similar financial aid for the control group as for the experimental group.

Because the null hypothesis could not be rejected, it can be concluded that the experimental group performed as well as the control group in college in academic and non-academic activities.

3. The null hypothesis that there were no significant differences between the control group and the experimental group in attaining choices of and entrances into graduate schools was rejected. Significantly more of the experimental group had entered graduate and professional schools, no significant differences were observed in the attainment of choices of schools. By 1962, significantly more of the experimental group had earned doctorates.

The rejection of the null hypothesis and further study of the data led to the conclusion that the experimental group surpassed the performance of the control group in graduate activities. The observed differences in graduate activities between the two groups were attributable not only to the Early Admission Program but also to initial differences between the two groups in socioeconomic backgrounds. To control part of the initial differences, the two groups were stratified by formal educations of fathers. Significantly larger numbers of the stratified experimental group whose fathers were college graduates had entered the

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schools.

4. The null hypothesis that there were no significant differences between the control group and the experimental group in occupational attainments and activities was rejected. Two of the seven items on occupational information in the follow-up questionnaires showed significant differences at the .01 level. Larger proportions of the experimental group had entered the academic professions and larger proportions of the experimental groups had indicated research activities.

The null hypothesis was rejected because the two groups took significantly different paths in occupational activities and not because of advantages or disadvantages for either group.

5. The null hypothesis that there were no significant differences between the control group and the experimental group in post-college socioeconomic activities was rejected. Fourteen items from the follow-up questionnaire on socioeconomic information were tested for differences. Three of the items showed significant differences at the .01 level. The control group had more children per family and had acquired a higher level of wealth since graduation with highest degrees than the experimental group. In addition, the religious affiliations of both groups followed the pattern of significant differences observed for their parents. Although there were many similarities between the two groups, the three observed differences indicated that the two groups had reproduced the significant differences of the socioeconomic statuses of their parents.

The null hypothesis was rejected because the two groups exhibited significantly different socioeconomic statuses and not because of advantages or disadvantages observed for either group.

Summary of Conclusions

1. The colleges which participated in the Early Admission Program were successful in selecting a control group of comparable academic promise as the experimental group. The control group, however, was unmatched in socioeconomic backgrounds when compared with the experimental group. Therefore, the advantages which accrued to the experimental group as a result of participation in the Program contained the effects of initial differences in socioeconomic backgrounds.

2. During the undergraduate years, the proportions of both groups which survived the attrition rate in college were not significantly different. The causes of the attrition rate were not examined in the follow-up study. The examination of the college transcripts of academic performance showed that the experimental group was as successful as the control group in college.

3. If entrance into graduate schools and earned doctorates are reasonable criteria of academic success, then the experimental group was highly successful. The academic records were impressive in that 89 of 240 early admittees had earned doctorates. The proportions was significantly greater than that of the control group.

4. Comparisons of occupational statuses do not provide measures of success because career goals and aspirations are individual matters. It is of interest, however, that a significantly larger proportion of the experimental group had entered professional occupations.

5. Although many of the socioeconomic activities of both groups were similar, the significant differences observed on parents were largely carried over to the families of both groups as adulst.

6. The experimental group of young men, who had come from families in which the fathers were well-educated professional men, had performed well in colleges. Although several significant differences were observed between the experimental group and the control group in post-college activities, few of the differences were clearly attributable to the Early Admission Program.

7. The Early Admission Program had provided the opportunity and the experimental group of young men had capitalized on the opportunity to accelerate the development of careers with minimum observable ill-effects both during and after college.

Comparison of Findings with Previous Reports

In 1957, the Fund for the Advancement of Education had concluded in its second report of the Early Admission Program that the experimental group had outperformed the comparison group academically. The findings of the follow-up study did not support that conclusion. The findings showed no significant differences at the .01 level between the academic performances of both groups on a year-by-year basis as determined by the gradepoint averages.

The Fund had also reported that large numbers of the experimental group had indicated plans for graduate studies. The findings of the follow-up study verified the indications of the report of the Fund and showed that compared with the control group significantly larger numbers of the experimental group had entered graduate and professional schools and had earned graduate graduate degrees.

Edstrom (41), in a summarized form of her final report of the Program to the Fund, had concluded that:

> Most of those students who entered college as Scholars in the Early Admission Program made normal progress through college, achieved grades as high or higher, were well-adjusted, and were more likely to attend graduate school than students of comparable

> ability, who entered college after completion of high school and at a more typical age (41, p. 412).

The findings of the follow-up study verified the conclusion by Ekstrom with two qualifications. The grades achieved by the two groups were not significantly different. While it is true that the experimental group did show greater tendency toward graduate studies, the tendency cannot be attributed solely to the Early Admission Program. The follow-up study showed that the attendance in graduate schools was partly attributable to initial differences in the socioeconomic backgrounds of the two groups.

The Program as a Large Scale Innovation

The early Admission Program as a large scale innovation in education could have been one of at least two kinds of projects. It could have been an exhaustive study with potential for conclusive results or it could have been a project to arouse interest, raise questions, or suggest solutions to problems. The Program began in 1951 as the second typeof project—it was an attempt to meet a specific problem. Before it got underway, however, the Program underwent a transformation to convert it into a project of the first type—a research project.

An obvious question about the Program was, "What was the Program trying to do?" Intially, the answer was simple—the Program was to provide two years of liberal education for young men before they were drafted into the armed services. As the Program evolved, the initial answer became inappropriate and subsequent answers became difficult to formulate. It is at least fair to say that the Program as it evolved was to provide young men with the opportunity to accelerate the development of their careers through early admission to college.

As a large scale innovation, the Program lacked a well-conceived underlying research plan. Consequently, many flaws were evident. The data, the data-gathering procedures, and the identification of critical variables were inconsistent. The Program lacked sampling procedures which would have insured wider applicability of its outcomes. The collection of purely categorical or nominal data prevented the development of schemes useful in identifying the characteristics of young men who were relatively successful in the Program. The result was the preparation of four reports of the Program (41, 42, 57, 58), and now a fifth (the follow-up study), each with difficulties because of the nature of the available data.

The Early Admission Program lacked a sound public relations program not so much for the public at-large as for the professional public of school and college educators. The Program seemed to have been undertaken with disdain for the concerns of critics who were professional educators. Pearson (31, preface) had felt that the Fund and the Program had misjudged the mood of the high schools. What seemed more likely was that the Fund and the Program had failed to involve the high school educators in the planning stages of the Program, and that the high school educators had interpreted the slight as a characteristic insensitivity of the college to the personal problems of young students. A public relations program would have resulted in assurances to the professional public that the Program contained proper safeguards for the emotional adjustments of the young students.

In addition to providing guidelines for the Program, a public relations program would have provided the necessary restraints that seemed totally absent in the report of the Fund in 1957. For example, the Fund had concluded:

> There is some evidence that in many cases early admission to college freed Scholars from the boredom and frustration of an unchallenging high school environment, gave them new intellectual momentum, and enhanced their social and emotional maturation (58, p. 10).

The apparent evidence were comments of the participants in the Program similar to:

> There is some danger that a young student's talents will be harmed by being thrust among older students who do not accept him. But the greater danger is that he will be allowed to stagnate in secondary school and will arrive in college lacking imagination and ambition, these having been "educated" out of him. The harm to him and to society is great (58, p. 90).

Such comments were unmistakable in their intent to place the onus of certain educational ills on the high schools. The comments did not add substance to the report and were not pertinent to the issue of academic acceleration. The comments, however, were pertinent to the context of the times in which many articles and books severely critical of contemporary American education appeared.

If the hidden rationale of the Early Admission Program had been to provoke the high schools into actions for improvement, a public relations program would have provided more acceptable and workable methods. The critics of the Program could not have been silenced, but a public relations program might have insured impartial treatment of the findings of the Program and subsequent impartial examination of the findings by high school educators.

The shortcomings of the research design of the Program had severe effects on the heuristic properties of the Program. Since the Program was incompletely transformed into a research project, some steps should have been taken to obtain as much data as was possible for future review. There had not been sufficient time in 1951 to prepare the rationales for the data to be gathered in the Program; therefore, the directors of the Program should have resorted to extensive straight-forward procedures using standardized tests and inventories to extablish data banks. The inconvenience of such procedures and the criticism of collecting data without purpose could have been tolerated in favor of the unanticipated values of the Program.

Although the Early Admission Program contained many flaws, it, nevertheless, provided more than mere indications about academic acceleration. The long-range outcomes are compelling reasons for re-examining the positions of high schools and colleges on helping students to accelerate their programs of formal education. It is unlikely, however, that the follow-up study will modify the opinions of sufficiently large large numbers of educators to permit such a review. The basic shortcomings of the Program, after all, are limitations of the follow-up study as much as they were of the Program itself.

On another scale, it is unlikely that the follow-up study will affect the policies of private foundations like the Ford Foundation and cause them to look more favorably upon improving the unanticipated applications of large scale innovations by expending greater effort toward standardized data banks. If such foundations continue to support large scale innovations anyway, refocused attention from being educational incidents to being significant research studies.

Further Comments and Speculations

One of the relationships which appeared following the analysis of the data of the Early Admission Experiment was the similarity in the careers of the experimental students and their fathers. The data in Chapter 6 show that many of the experimental students chose academic careers. The data further show that many of the fathers of these experimental students were employed in the academic professions. Unfortunately, the data reduction techniques used in handling occupational information merged the occupations of the students and of their parents into broad categories. In the process, the information about a specific student and his father was lost. As a result, the relationship between the careers of individual students and their fathers could not be tested in the follow-up study.

The data of the follow-up study raise a doubt about the comparative academic performance between the experimental and the control groups. On the one hand, tests of the data show no significant differences between the groups in academic performance. However, other data show that large numbers of the control group spent significantly more hours away from their studies by working at part-time jobs. All of the experimental students had received financial aid while only a small, but undetermined, number of control students had received financial aid. The doubt raised concerns the probable academic performance of the control group if they had received financial aid similar to that received by the experimental group.

The follow-up study revealed a significant difference in religion between the experimental and the control groups. The experimental group was predominately Jewish; the control group predominately Protestant. These ethnic and cultural characteristics may influence academic performances in college and graduate school. In the follow-up study, no further effort was made to examine this difference.

An oversight in the data collection procedures made it impossible to answer the question, "How did the groups fare in the development of careers in science?" The question must now be set aside for further study.

The findings of the follow-up study provide a perspective with which to answer some of the questions posed by educators in 1950 when the Early Admission Experiment began. At that time, the reactions of educators showed an unwillingness to consider any change in the school-to-college relationship. The reactions seemed inappropriate because of the small segment of the total high school population involved in the experiment—400 experimental students from more than two million enrolled in the tenth grade throughout the country. The follow-up study showed that the

the mental health, social development, and academic progress of the few carefully chosen experimental students did not differ from those of the older control group.

When the colleges undertook the Program, they announced their intention to preserve the continuity of intellectual and leadership potential in the colleges during a period of national emergency. Each of the colleges participating in the Program adopted early admission procedures in the post-Program period. It seems doubtful, however, that they had used the Program as a model for modifying their own admissions procedures. Early admission, from the tenth or eleventh grade of high school to college, has been used very rarely, if at all, since 1957.

Appendix

A. Evaluation Study of Selected College Students--Copies of three questionnaires used in the Early Admission Program, 1953-58.

B. Letter by Joseph B. Chaplin, President of the NASSP, and Paul E. Elicker, Executive Secretary of the NASSP (Sch. Rev., 1951, 59, 316-320).

C. The Early Admission Follow-up Instruments.

D. Summary of Returns in the Early Admission Follow-up Study.

E. Attrition Rate of Control and Experimental Students, 1951-55.

F. Career Preferences of the Early Admittees, 1951 (57, p. 122)

G. Supplementary Tables of Summary of Responses to the Follow-up Questionnaire

Appendix A

Evaluation Study of Selected College Students--Copies of three questionnaires used in the Early Admission Program, 1953-1958.

EVALUATION STUDY OF SELECTED COLLEGE STUDENTS

College Student Questionnaire

INTRODUCTION: Your college along with eleven others and the Ford Foundation's Fund for the Advancement of Education is engaged in a nationwide program of evaluation involving the educational progress of selected college students. In order to contribute its share to the study, your college is asking you to complete a questionnaire containing primarily items of a biographical nature. Many of the items are already in the college files, but others of importance are not. This questionnaire will be forwarded to Educational Testing Service, Princeton, New Jersey, for analysis and interpretation. Some of the information is of a personal nature but you can be assured that it will be kept confidential and at no time used in such a way as to identify any one individual. You are asked to answer each question as accurately and honestly as you can. In answering the questions, you may use either pen or pencil. but be sure to clearly indicate your response to each question. Observe the following directions carefully.

DIRECTIONS: Whenever a question is followed by a number of answers, encircle the number of the answer that most nearly fits your case or expresses your opinion. When a question is followed by a blank in which something is to be written, write in your answer.

Your name ____
(Please print) Last name First name Middle initial

Your present home address ____
Number and Street

____
City Postal Zone State

1. What college are you now attending? ____________________

2. When did you enter college? Fall of 195__

3. What is your sex? 1- Male 2- Female

4. What was the last grade you completed in high school or preparatory school?

   1- Less than 10 2- 10; 3- $10\frac{1}{2}$; 4- 11; 5- $11\frac{1}{2}$; 6- 12.

5. What was your age at the time you entered college? (14.6 means 14 years, 6 months)

   0- under 14.6;
   1- 14.6-14.11;
   2- 15-15.5;
   3- 15.6-15.11;
   4- 16-16.5;
   5- 16.6-16.11;
   6- 17-17.5;
   7- 17.6-17.11;
   8. 18-18.5;
   9- 18.6 and over

6-7 Encircle the number of your home state. They are listed vertically in alphabetical order, with D.C. and "Foreign" at the end.

1. Ala.
2. Ariz.
3. Ark,
4. Cal.
5. Colo.
6. Conn.
7. Del.
8. Fla.
9. Ga.
10. Idaho
11. Ill.
12. Ind.
13. Iowa
14. Kan.
15. Ky.
16. La.
17. Me.
18. Md.
19. Mass.
20. Mich.
21. Minn.
22. Miss.
23. Mo.
24. Mont.
25. Neb.
26. Nev.
27. N. H.
28. N. J.
29. N. M.
30. N. Y.
31. N. C.
32. N. D.
33. Ohio
34. Okla.
35. Ore.
36. Pa.
37. R. I.
38. S. C.
39. S. D.
40. Tenn.
41. Tex.
42. Utah
43. Vt.
44. Va.
45. Wash.
46. W. Va.
47. Wisc.
48. Wyo.
49. D. C.
50. Foreign

8. Size of home community:

1- large city, population over 100,000;
2- suburb of large city;
3- medium size city, not a suburb, 30,000-100,000;
4- small city, not a suburb, 10,000-30,000
5- town, 2,500-10,000
6- small town, under 2,500
7- Farm or country.

In items 9 and 10, describe the type of work done. Do not give the name of the company or organization for which either parent works.

9. Father's occupation: ______________________________

10. Mother's occupation: ______________________________

11. Is either parent deceased? 1- father; 2- mother; 3- both; 4- neither.

12. If both are living, are they: 1- living together; 2- separated; 3- di

13. Last year's income of father plus that of mother (or guardians) before t

0- Unknown; 1- Under $2,000; 2- $2,000-$2,999; 3- $3,000-$3,99

4- $4,000-$4,999; 5- $5,000-$5,999; 6- $6,000-$6,999; 7- $7,000-$7,99

8- $8,000-$8,999; 9- $9,000 and over.

14. How much have you worked for pay, apart from college scholarships or loans, during the present academic year (not counting the summer vacation)?

0- None;
1- An average of less than two hours a week;
2- An average of two to five hours a week;
3- An average of five to ten hours a week;
4- An average of ten to twenty hours a week;
5- An average of more than twenty hours a week.

What is the highest level of schooling completed by;

15. Father?

0- unknown
1- attended grade school but not high school
2- attended high school but did not graduate
3- graduated from high school but did not attend college
4- attended college but did not graduate
5- graduated from college but did not attend graduate school
6- attended graduate school but took no advanced degree
7- has Master's degree
8- has law, medical, or dental degree
9- has an earned non-medical Doctor's degree (Ph.D., S.D., etc.)

16. Mother?

0- unknown
1- attended grade school but not high school
2- attended high school but did not graduate
3- graduated from high school but did not attend college
4- attended college but did not graduate
5- graduated from college but did not attend graduate school
6- attended graduate school but took no advanced degree
7- has Master's degree
8- has law, medical, or dental degree
9- has an earned non-medical Doctor's degree (Ph.D., S.D., etc.)

17. The last high school or preparatory school you attended was:

1- a public city high school;
2- a public high school in a suburb of a city;
3- a public high school in a town of less than 10,000 population;
4- a consolidated rural public high school;
5- a private preparatory school, not controlled by a church;
6- a church-controlled high school or preparatory school;
7- a military academy, privately controlled;
8- a military academy, church-controlled.

18. The size of the senior class in the last year you attended was approximately:
1- under 50; 2- 50-99; 3- 100-199; 4- 200-499; 5- 500 or over; 6- unknown

How many years of each of the following subjects did you take in high school or preparatory school grom the time you entered grade 9 until you left school? (For fractions of years encircle the next higher whole number. For example, if you has 3½ year of foreign language, encircle 4)

19. English:	0	1	2	3	4	5 or more
20. Social Studies:	0	1	2	3	4	5 or more
21. Natural Science:	0	1	2	3	4	5 or more
22. Mathematics:	0	1	2	3	4	5 or more
23. Foreign Language:	0	1	2	3	4	5 or more

What was the average number of hours per day during the past week that you spent in:

24. Preparing assignments? 1 2 3 4 5 6 7 8 9 or more

25. Recreation? (including extra-curricular activities, social affairs, etc., but excluding eating) 1 2 3 4 5 6 7 8 9 or more

26. Sleep? .... 4 5 6 7 8 9 or more

List the extra-curricular activities in which you have participated this year:

Athletic ____

____

None-athletic ____

____

List any offices that you have held this year (elective, mamgerial, editorial, etc.) :

____

____

27. Have you had dates with members of the opposite sex during the present academic year?

0- No;
1- Some, but less than averafe for members of my class;
2- About average for members of my class;
3- More than average for members of my class.

28. Have you been able to finish your assignment s on time?

1- No, I am usually behind in most courses
2- I have had some difficulty in keeping up with assignments
3- I am seldom behind in more than one course
4- I almost always complete assignemtnts on time
5- Always

29. Have you been handicapped in your college work by faulty or insufficient preparation in high school or preparatory school?

1- Yes; 2- No; 3- A little.

If you felt handicapped, in what subject or subjects:

____

30. What is your present first choice of a major field of study?
Check here is undecided ( )

---

31. What is your present first choice of a future occupation?
Check here if undecided ( )

---

32. Which of the following comes nearest to summing yp your honest opinion of the value of your college experience as a whole thus far?

1- I got little or nothing out of it.
2- It was of some value but, on the whole, disappointing.
3- About half was worthwhile, the rest not.
4- More than half was well worthwhile.
5- Almost all of it was of great value to me.
6. It is too early for me to judge.

33. Of the courses you have taken this year, how many were both enjoyable and valuable?

0- None; 1- Less than half; 2- About half;
3- More than half; 4- Almost all; 5- All.

34. Of all the teachers you have had this year, how many took a sympathetic interest in students as individuals?

0- None; 1- Less than half; 2- About half;
3- More than half; . 4- Almost all; 5- All.

EVALUATION STUDY OF SELECTED COLLEGE STUDENTS

College Questionnaire

DIRECTIONS: Encircle the number of the response to each item that is most nearly correct for this student. Fill in blanks with scores, etc., as directed. Than staple this form to the back of the student questionnaire filled our by this student. The items below begin with number 35 because items 1-34 will be taken from the student questionnaire. If the student is in his second college year, give the information for that year only, except where otherwise indicated.

Student's name ____
(Please print) Last name First name Middle initial

Permanent address ____
Number and Street

____
City Postal zone State

35. College: X Y 0 1 2 3 4 5 6 7 8 9 36-37-38. Student's code number:____

39. Status in study: 1- Fund Scholar 2- Comparison 3- Classmate

40. Is this student now a scholarship holder, Fund or otherwise? 1- No
2- Partial tuition only 3- Full tuition only 4- Full tuition plus a stipend

41. Height at entrance: 1- Under 5' 2- 5'0"-5'2" 3- 5'3"-5'5"
4- 5'6"-5'8" 5- 5'9"-5'11" 6- 6' and over

42. Weight at entrance: 1- Under 100 lbs. 2-100-119 3- 120-139
4- 140-159 5- 160-179 6- 180-199
6- 200 and over

Health ratings for current year by Student Health Service or other college medical services

43. Physical: 1- Very poor 2- Poor 3- Good 4- Excellent

44. Mental: 1- Very poor 2- Poor 3- Good 4- Excellent

45-46-47. CEEB Scholastic Aptitude: Verbal____ 48-49-50. Mathematical____

ACE Psychological Examination: raw scores. Which form was used? 19__

51-52. Quantitative____ 53-54-55. Linguistic____ 56-57-58. Total____

(If other aptitude tests were used, see Manual for instructions.)

In what tenth of the class did this student stand in grade point average?

	Lowest 0-9%	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	Highest 90-99%
59. Last year in high school	0	1	2	3	4	5	6	7	8	9
60. First year in college	0	1	2	3	4	5	6	7	8	9
61. Third year in college	0	1	2	3	4	5	6	7	8	9

Cooperative General Achievement Tests taken ______________________
Month and Year

Scaled Scores:	0-9	10-19	20-29	30-39	40-49	50-59	60-60	70-79	80-89	90-9
62. Social Science	0	1	2	3	4	5	6	7	8	9
63. Natural Science	0	1	2	3	4	5	6	7	8	9
64. Mathematics	0	1	2	3	4	5	6	7	8	9
65. Literature	0	1	2	3	4	5	6	7	8	9

Extent of participation in extra-curricular activities as rated by dean or advisor:

66. Athletic: 0- None 1- Less than average 2- Average
3- More than average 4- Extensive

67. Non-athletic: 0- None 1- Less than average 2- Average
3- More than average 4- Extensive

68. Offices held: 0- None 1- One of minor importance 2- More than one of minor importance
3- One of major importance 4- More than one of major importance 5- A combination of major and minor

69. Fraternity, sorority, or social club membership:

1- Member 2- Non-member 3- None available 4- Not eligible
(If either 3 or 4 applies, do not encircle 2)

70. Extent of dating: 0- None 1- Less than average 2- Average
3- More than average 4- excessive

71. Student's over-all rating of adjustment to college life as compared with other members of the class: (See Manual of Instructions)

0- Very poor 1- Poor 2- Moderately good 3- Good 4- Excellent

72. Student's popularity rating as compared with other members of the class: (See Manual of Instructions):

0- Disliked 1- Unnoticed 2- Accepted 3- Well liked 4- A leader

73. Continuance in college: This student 1- Will continue with scholarship 2- Will continue withour scholarship 3- Has dropped out, or will soon drop out.

(If response 3 applies, add the month and year of withdrawal __________)

74. If a scholarship was not renewed, it was:

1- because the student failed primarily in academic grades
2- because the student failed primarily in some other way to adjust to college life
3- in spite of adequate adjustment to college life

75. If the student dropped out it was:

1- because the student failed primarily in academic grades
2- because the student failed primarily in some other way to adjust to college life
3- in spite of adequate adjustment to college life

76. Consensus of instructors' reports on keeping abreast of assignments as collated by dean or advisor: This student

1- is usually behind in most courses
2- has difficulty keeping up with assignments
3- is seldom behind in more than one course
4- almost always completes assignments on time

77. (For second year students only) If there were serious gaps or omissions in the high school preparation of this student, such as never having had a course in a natural science, in which of the following fields do such gaps still remain, in the judgment of the dean or advisor?

0- None 1- English Composition 2- English Literature 3- Social Science
4- Natural 5- Mathematics 6- Foreign Language

1. Student's code no. ______

2. Entered college fall of 195____

3. Status in study: 1 Fund Scholar
   2 Comparison

COLLEGE QUESTIONNAIRE ON SENIORS

Evaluation Study of Selected College Students

DIRECTIONS: Encircle the number of the response to each item that is most nearly correct for this student. Be sure to answer items 1-3 in the upper right-hand corner of this page.

Student's name ____
(Print or type) Last name First name Middle initial

Permanent address ____
Number and street

____
City Postal Zone State

4. College: X Y 0 1 2 3 4 5 6 7 8 9

5. Did this student hold a scholarship, Fund or otherwise, in the senior year? (If 5 or 6 applies, do not encircle 1.)

   1 no
   2 partial tuition only
   3 full tuition only
   4 full tuition plus a stipend
   5 has already graduated (month and year of graduation: ______________)
   6 has entered military service

6. If a previously held scholarship was not renewed, it was because

   1 the student failed primarily in academic grades
   2 the student failed primarily in some other way to adjust to college life
   3 the financial aid was no longer needed
   4 some other reason (please specify: ______________________________)

7. Completion of college: Will this student graduate in June, 1955?

   1 yes 2 no 3 has already graduated

8. Drop-outs from college: If this student dropped out, it was because he or she

   1 failed primarily in academic grades
   2 failed primarily in some other way to adjust to college life
   3 entered military service
   4 married and left school
   5 desired to transfer to another college
   6 was unable to continue for financial reasons
   7 was unable to continue because of ill health
   8 some other reason (please specify: ______________________________)

10. Has this student already entered graduate or professional school?

1 yes 2 no

11. If not, does this student plan to enter a graduate or professional school?
(If 3 or 4 applies, do not encircle 1.)

1 law
2 medicine
3 engineering
4 business
5 Natural sciences (including mathematics)
6 social sciences
7 humanities
8 education
9 other (please specify: ____________________)

12. What is the student's present first choice of a future occupation:

1 secondary or elementary teaching
2 college teaching
3 law
4 medicine
5 engineering
6 business
7 science
8 agriculture
9 other (please specify: ____________________)

13. Rand in graduating class: ________ out of ____________ students.

14. Percentile rank in graduating class: ______________ percentile.

How many full-year courses in each of the following areas did this student take in college? (For fractions of years, encircle the next high whole number. For ecample, if he took 3½ years of foreign languages, encircle 4.) Disregard courses that connot be classified under these headings.

15. English..............................0 1 2 3 4 5 6 7 8 9

16. Social sciences......................0 1 2 3 4 5 6 7 8 9

17. Physical sciences....................0 1 2 3 4 5 6 7 8 9

18. Biological sciences..................0 1 2 3 4 5 6 7 8 9

19. Mathematics..........................0 1 2 3 4 5 6 7 8 9

20. Foreign languages....................0 1 2 3 4 5 6 7 8 9

21. Art and Music........................0 1 2 3 4 5 6 7 8 9

22. Philosophy and religion..............0 1 2 3 4 5 6 7 8 9

Extent of participation in extra-curricular activities during senior year:

23. Athletic: 0 none 1 less than average 2 average 3 more than

24. Non-athletic: 0 none 1 less than average 2 average 3 more than av

25. Offices held

0 none
1 one of minor importance
2 more than one of minor importance
3 one of major importance
4 more than one of major importance
5 a combination of major and minor

26. Fraternity, sorority, or social club membership:
(If 3 or 4 applies, do not encircle 2.)

1 member 2 non-member 3 none available 4 not eligible

27. Extent of dating:

0 none
1 less than average
2 average
3 more than average
4 excessive
5 married

Student's over-all rating of adjustment to college life as compared with other members of the senior class (see Manual of Instructions):

0 very poor 1 poor 2 moderately good 3 good 4 excellent

If the answer to question 28 was "very poor" or "poor," do you think the student's over-all adjustment to college life might have been better if he or she had entered college at the "normal" age or after completing high school?

1 yes 2 no 3 doubtful 4 don't know

Student's popularity rating as compared with other members of the senior class (see Manual of Instructions):

0 disliked 1 unnoticed 2 accepted 3 well liked 4 a leader

(To be answered for Scholars only.) What is present faculty and administrative opinion as to whether or not it was wise to admit this student to college before completing high school or before age 16½? If opinion is that it was unwise, please cite reasons.

1 It was wise.
2 Opinion is divided.
3 It was unwise. (Reasons: ______________________________

____

____)

Appendix B

Letter by Joseph B. Chaplin, President of the the NASSP, and Paul E. Elicker, Executive Secretary of the NASSP (*Sch. Rev.*, 1951, 59, 316-320).

LETTER BY JOSEPH B. CHAPLIN, PRESIDENT OF THE NASSP AND PAUL E. ELICKER, EXECUTIVE SECRETARY, NASSP

(As extensively quoted by Anderson, H. A.,
"Ford Millions for Education,"
Sch. R., 59:316-320, 1951)

". . .Secondary school principals are advised that this Plan (EAP) to admit high school boys before graduation from high school is regarded as educationally unsound and damaging to the best interest of boys individually and to high schools generally. Furthermore, it is contrary to the opinions of leading educators from colleges and secondary schools recently stated at a Conference on Acceleration held by the American Council on Education on March 19-20, 1951, in Washington, D. C. This curtailment of secondary education under the guise of scholarship aid is more devastating to youth and the secondary school program than acceleration which was regarded, also by leading educators, at the above conference, as unwise, unnecessary and unsound.

". . .This plan is in direct opposition to Recommendation 8 of the "Nine Point Program" made by the Committee on the Relation of Secondary Education to National Security of the National Association of Secondary School Principals:

> "8. Early Admission to College. Recommended that secondary schools refrain from curtailing their educational programs to the extent that youth would, except in very unusual cases, enter college before their graduation from secondary school."

". . .The acceptance by colleges of high school students before graduation was proposed by a few colleges at the beginning of World War II when they anticipated a reduction in enrollment of male students. The group soon abandoned the idea when the Armed Forces decided to send men from the Armed Forces to the colleges for further military and related training. The plan was then regarded as educationally unsound.

". . .Such a plan at any time is unsound and inadvisable mainly because of the immaturity of school youth to work on a collegiate level at such a youthful age. These youth are removed prematurely from the guiding direction of parents and home and from the teachers and counsellors of the secondary school trained and experienced to work with 15- and 16-year old youth.

". . .Educators regard the Junior and Senior years in the secondary school the most valuable and formative years for school youth. An experience even in wartime away from home in college, especially in our large universities, among older and more mature men and women is an unsatisfactory [illegible] for an educational and developmental program for our young boys and girls.

". . .Recommended action for Secondary-School Administrators:

1. That we oppose the acceptance of any plan which will result in the curtailment of secondary education for youth even though it may be on a limited scale.

That we advise with students, teachers, counsellors and parents of our schools and school communities accordingly.

2. That we recommend for college only youth who have completed the requirements for graduation in keeping with the policies of our regional accrediting agencies. On the basis of this policy that we recommend for college only youth who have completed the 12th grade.

3. That we award secondary-school diplomas or equivalency certificates only to students who meet the required and established standards for graduation from the secondary schools.

4: That we use every means at our command to present to all educational, community and other meetings the implications of the unsound practices of curtailing secondary education and the subsequent admission of students to college before graduation. That we point out as effectively and as forcibly as possible those dangers, even with the alluring inducement of funds provided by the Ford Foundation. We must make citizens generally aware of the sinister implications of such a program especially if a scholarship award is offered to their sons.

5. That you as principal or superintendent write Now to the Director of Admissions of one or more of the four universities, stating your position on general policy of curtailment of secondary education. Address the institution in this "experiment" with which you have closest relations... ."

Appendix C

The Early Admission Follow-up Instruments.

EARLY ADMISSIONS EXPERIMENT FOLLOW-UP[*]

AME ....

DDRESS ....

ITY .... STATE ....

Read the items carefully and circle the number of the response which you feel is most appropriate for you. Your responses will be kept in strict confidence.

I. PRE-COLLEGE INFORMATION

We need information about you at the time you entered college.

Age at entrance into college
1. 14 years old
2. 15 years old
3. 16 years old
4. 17 years old
5. 18 years old
6. Over 19 years old

Years of schooling completed
1. Ninth grade
2. Tenth grade
3. Eleventh grade
4. Twelfth grade

Size of home community
1. Less than 25,000
2. 25,000 – 50,000
3. 50,000 – 100,000
4. 100,000 – 500,000
5. 500,000 or up

Type of secondary school attended
1. rural
2. urban

Size of senior class at secondary school
1. Less than 100
2. More than 100 but less than 200
3. More than 200 but less than 500
4. More than 500 but less than 1,000
5. More than 1,000 but less than 2,000
6. More than 2,000

Family income
1. Less than $ 4,000
2. $ 4,000 – $ 5,999
3. $ 6,000 – $ 7,999
4. $ 8,000 – $ 9,999
5. $10,000 – $11,999
6. $12,000 – up

II. GENERAL FAMILY BACKGROUND

Father's birthplace
1. In the United States
2. In Canada
3. In the British Isles
4. In Mexico or South America
5. In Europe
6. In Russia

Father's formal education
1. Some grade school
2. Finished grade school
3. Some high school or trade school
4. Finished high school or trade school
5. Some college, business or technical school
6. Finished business or technical school
7. Finished college
8. Attended graduate school or professional school after college
9. Do not know

Your father's religious affiliation
1. None
2. Protestant
3. Catholic
4. Jewish
5. Other

---

[*] *This project is supported by the Cooperative Research Program of the Office of Education, U.S. Department of Health, Education, and Welfare.*

Mother's birthplace
1. In the United States
2. In Canada
3. In the British Isles
4. In Mexico or South America
5. In Europe
6. In Russia

5. Mother's formal education
1. Some grade school
2. Finished grade school
3. Some high school
4. Finished high school
5. Some technical or business training after high school
6. Some college or finished junior college
7. Finished college
8. Attended graduate school or professional school after college
9. Do not know

6. Did your mother have a paying job when you entered college?
1. She worked full time
2. She worked part time
3. She did not have a paying job
4. She was not living

7. Your mother's religious affiliation
1. None
2. Protestant
3. Catholic
4. Jewish
5. Other

III. GENERAL ACTIVITY BACKGROUND

1. Were you an officer in any college undergraduate academic clubs?
1. No
2. Yes

2. Are you, or have you ever been, a class officer or an elected student body officer in any college?
1. No
2. Yes

3. Were you on any high school or city athletic teams?
1. No
2. Yes

4. Did you play in your college or high school band or orchestra?
1. No
2. Both high school and college
3. High school only
4. College only

5. Have you ever been in any publicly performed plays while in college or high school?
1. No
2. Both high school and college
3. High school only
4. College only

6. Of the people about your own age with [illegible] time whil[illegible] how many of them attended college or have finished college?
1. None
2. Only a few
3. Most of them
4. All of them

IV. ACADEMIC BACKGROUND

1. Name of Graduate School attended for Master of Arts, Bachelor of [illegible], etc. | From to | Name of Degree

Was the above graduate school you entered your
1. First choice 2. Second choice 3. Other choice

2. Name of Graduate School attended for Doctorate (professional degree, not academic degree) | From to | Name of Degree

Was the above graduate school you entered your
1. First choice 2. Second choice 3. Other choice

3. Name of Graduate School attended for Doctorate (academic degree) | From to | Name of Degree

Was the above graduate school you entered your
1. First choice 2. Second choice 3. Other choice

4. Number of times you changed undergraduate major area of study.
   0. None
   1. 1
   2. 2
   3. 3 or more

5. Number of times you changed graduate major area of study.
   0. None
   1. 1
   2. 2
   3. 3 or more
   4. Did not attend graduate school

6. Have you fulfilled, or are you now fulfilling your military obligation?
   1. Yes
   2. No

7. Number of different positions held since graduation with highest degree
   0. None
   1. 1
   2. 2
   3. 3
   4. 4 or more

8. Did the changes in Item 7 mean a change of field of study?
   1. Yes
   2. No

V. PRESENT PERSONAL INFORMATION

1. Marital status
   1. Single
   2. Married
   3. Widowed
   4. Divorced
   5. Remarried

2. Number of children
   1. I am not married
   2. I am married and have no children
   3. 1 child
   4. 2 children
   5. 3 children
   6. 4 children
   7. 5 children
   8. 6 or more children

3. Educational background of wife. Circle appropriate years of schooling
   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 more

4. Highest degree earned by wife
   1. None
   2. Bachelor's degree
   3. Master's degree
   4. Doctor's degree

5. Residence
   1. Single house
   2. Duplex section
   3. Apartment in small building of less than 10 apartments
   4. Apartment in large building of 10 or more apartments

6. Size of community in which you now live
   1. Less than 25,000
   2. 25,000 - 50,000
   3. 50,000 - 100,000
   4. 100,000 - 500,000
   5. 500,000 or up

7. Membership in number of service organization (Kiwanis, Lions, etc.)
   0 1 2 3 4 5 6 7 8 more

8. Have you been an officer in such organizations?
   1. No
   2. Yes

9. Number of elective positions you have held in community
   0 1 2 3 4 5 6 7 8 more

10. Your religious affiliation
    1. None
    2. Protestant
    3. Catholic
    4. Jewish
    5. Other

VI. PRESENT ECONOMIC INFORMATION

1. Present primary occupational status
    1. Professional, self-employed
    2. Professional, industrial
    3. Professional, academic (colleges and schools)
    4. Professional, government service (non-academic)
    5. Non-professional, self-employed
    6. Non-professional, industrial
    7. Non-professional, private group
    8. Non-professional, government service

2. Present position can be described as
    1. Upper level of organization
    2. Junior level of organization
    3. Lower level of organization

3. Length of service in present position
    1. Less than 1 year
    2. More than 1 year but less than 3
    3. More than 3 years but less than 5
    4. More than 5 years

4. Current salary range
    1. Less than $ 4,000
    2. $ 4,000 – $ 5,999
    3. $ 6,000 – $ 7,999
    4. $ 8,000 – $ 9,999
    5. $10,000 – $11,999
    6. $12,000 – up

5. Range of value of personal and real property acquired (but not through inheritance) since graduation with latest degree
    0. None
    1. $ 5,000 or less
    2. $10,000 – $19,999
    3. $20,000 – $29,999
    4. $30,000 – $39,999
    5. $40,000 – $49,999
    6. $50,000 and on up

6. Range of value of property inherited
    0. None
    1. $ 5,000 or less
    2. $10,000 – $19,999
    3. $20,000 – $29,999
    4. $30,000 – $39,999
    5. $40,000 – $49,999
    6. $50,000 and on up

7. Range of value of other property owned
    0. None
    1. $ 5,000 or less
    2. $10,000 – $19,999
    3. $20,000 – $29,999
    4. $30,000 – $39,999
    5. $40,000 – $49,999
    6. $50,000 and on up

VII. OTHER ACTIVITIES

1. Number of books published to date
    0. None
    1. 1
    2. 2
    3. 3
    4. 4
    5. 5
    6. More than 5

2. Number of articles you contributed to journals
    0. None
    1. 1
    2. 2
    3. 3
    4. 4
    5. 5
    6. More than 5

3. Number of professional organizations to which you belong
    0. None
    1. 1
    2. 2
    3. 3
    4. 4
    5. 5
    6. More than 5

4. Number of research projects of all types in which you have directly participated
    0. None
    1. 1
    2. 2
    3. 3
    4. 4
    5. 5
    6. 6
    7. 7
    8. 8
    9. More than 8

5. Number of subscriptions to professional journals
    0. None
    1. 1
    2. 2
    3. 3
    4. 4
    5. 5
    6. 6
    7. 7
    8. 8
    9. More than 8

Appendix C (Continued)
ADDITIONS AND REVISIONS TO EARLY ADMISSION EXPERIMENT FOLLOW-UP QUESTIONNAIRE

Question Number	ADDITIONS	REVISIONS
Part II		
Ques. 1	7. Other	
3	6. Unknown	
4	7. Other	
7	6. Unknown	
Part III		
Ques. 6	5. Do not know; have lost contact	
Part IV		
Ques. 8	3. Not applicable	
Part V		
Ques. 1	6. Separated	
3		0. Not applicable 1. 1-12 years 2 13-14 years 3. 15-16 years 4. 17-18 years 5. 19-20 years 6. More
4	0. Not applicable 5. Registered Nurse 6. Junior College Certificate	
5	5. Dormitory	
Part VI		
Ques. 1	9. Student	
2	4. None of the above	
5	7. $5,000 - $9,999	
6	7. $5,000 - $9,999	
7	7. $5,000 - $9,999	

Appendix C (Continued)
LETTER #1

In 1951, you participated in the Early Admission Experiment sponsored by the Ford Foundation. Now we are making a study of those who participated in the Experiment to see what effects it has had.

The project is being conducted at the University of Hawaii and is supported by a grant from the U. S. Office of Education. The project has the cooperation of Harvard University, Educational Testing Service (Princeton, New Jersey), and the Ford Foundation. It is concerned with the long-range effects of academic acceleration between high school and college.

Your reply will be kept in strict confidence.

The enclosed questionnaire will take a few minutes of your time to complete, but the information you supply may help us to evaluate more accurately than has been possible in the past one procedure used in American education.

Please do it now! A self-addressed stamped envelope is enclosed for your convenience.

Your cooperation is appreciated.

Sincerely,

James W. Miller
Assistant Professor of Education
Principal Investigator

Appendix C (Continued)
LETTER #2

We are still hoping to hear from you. Most of the students we have asked to cooperate have done so, but for more useful results we need a complete response. We need your help.

You will remember that we want to find out the long-range effects of academic acceleration from high school to college. The findings from the project might be useful to American educators in plotting the direction of American education. Your answers will be used only for research. Your reply will be held in strictest confidence.

Please give a minute of your time now. Please fill out the enclosed questionnaire while you have it before you.

We will sincerely appreciate your help.

Sincerely,

James W. Miller
Assistant Professor of Educatio
Principal Investigator

Appendix C (Continued)
TRANSCRIPT RELEASE FORM

The Early Admissions Follow-Up Project, being conducted at the University of Hawaii under a cooperative research grant from the U. S. Department of Health, Education, and Welfare, has my permission to secure transcripts of grades of my college work.

It is understood that they will handle the information in confidence.

Signature of Student

Date

Appendix D

Summary of Returns in the Early Admission Follow-up Study

School	Included in Study	Deceased	Returned Unclaimed	No Record	Other*	Totals
CHICAGO						
Control	17	0	14	2	0	33
Exp.	24	0	19	7	0	50
COLUMBIA						
Control	26	0	12	10	0	48
Exp.	37	0	9	5	0	51
OBERLIN						
Control	14	0	5	0	0	19
Exp.	9	0	3	2	0	14
WISCONSIN						
Control	29	1	9	4	2	45
Exp.	43	0	3	6	0	52
YALE						
Control	35	1	8	7	1	52
Exp.	31	1	7	7	0	46
TOTALS	265	3	89	50	3	410

*Includes late questionnaires and those persons who did not care to answer the questionnaire.

Appendix F

Career Preferences of the Early Admittees, 1951 (57, p. 122)

Career Preference	Colleges and Universities					Totals
	Chicago	Columbia	Oberlin	Wisconsin	Yale	
Science	33	28	13	22	19	115
Non-science	19	7	12	12	14	64
Unknown	8	16	0	18	19	61
TOTALS	60	51	25	52	52	240

Appendix G

Supplementary Tables of Summary of Responses to the Follow-up Questionnaire

I. University of Chicago - Control Students

II. Columbia University - Control Students

III. Oberlin College - Control Students

IV. University of Wisconsin - Control Students

V. Yale University - Control Students

VI. Total Control Students

VII. University of Chicago - Experimental Students

VIII. Columbia University - Experimental Students

IX. Oberlin College - Experimental Students

X. University of Wisconsin - Experimental Students

XI. Yale University - Experimental Students

XII. Total Experimental Students

Table I
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

University of Chicago - Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1					10	6	1				
2				1	16						
3		2	2	2	1	10					
4		1	16								
5		2	4	6	4	1					
6		1	4	5	3	1	3				
Part II											
1		12					5				
2		1		3	2	5	1	2	3		
3		5	6		6						
4		13				2	2				
5			1	2	5	1	5	1	2		
6		4	3	9	1						
7		3	7	2	5						
Part III											
1		12	5								
2		15	2								
3		9	8								
4		10	1	6							
5		7	2	8							
6			6	6	5						
Part IV											
1		7	1								9
2		4		2							11
3		2									[illegible]
4	11	4	2								
5	10	2	1	1	3						
6		10	7								
7		9	6	1	1						
8		1	12	4							
Part V											
1		4	11		1	1					
2		4	1	8		3	1				
3	5	2	1	7	2						
4	5	4	7	1							

*No Response

Table I (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

University of Chicago - Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		5	3	4	5						
6		4				13					
7	13	2	2								
8		14	3								
9	17										
10		6	4	1	6						
Part VI											
1		3	5	2	5			2			
2		6	8	3							
3		6	7	1	3						
4		1	2	6	3	3	2				
5	1	13		3							
6	14		1	1	1						
7	11	4		2							
Part VII											
1	16	1									
2	10	2	2	2			1				
3	8	3	4	1	1						
4	5	3	2	4	1			1		1	
5	7	4	4	1		1					

*No Response

Table II
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Columbia University - Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1				4	13	9					
2				2	24						
3		4	4	3	1	14					
4		3	23								
5		7	2	8	7	1	1				
6		2	4	4	8	2	6				
Part II											
1		15				5	5	1			
2		3	3	7	2	3		3	5		
3		2	6	5	10	3					
4		18				7		1			
5		2	3	6	7	3	1	3	1		
6		5	6	15							
7			7	5	11	3					
Part III											
1		22	4								
2		19	7								
3		9	17								
4		22	3	1							
5		15	3	7	1						
6			3	17	6						
Part IV											
1		11									15
2		5	1								20
3		2	1								23
4	16	8		2							
5	16	1	1		8						
6		17	9								
7		4	11	4	6						1
8		3	21	1							1
Part V											
1		5	21								
2		5	5	6	4	3	3				
3	5	2	4	3	7	1					
4	5	10	7	4							

*No Response

Table II (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Columbia University - Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		14		3	8						1
6		5	3	1	1	16					
7	20	6									
8		24	2								
9	25		1								
10		7	5	4	7	3					
Part VI											
1		3	6	12	1	2		2			
2		9	10	5	2						
3		8	12	6							
4		2	3	8	6	4	3				
5	2	12	7	3			2				
6	24	1	1								
7	18	5	1	1		1					
Part VII											
1	26										
2	16	4		2	2		2				
3	4	13	5	2		1	1				
4	8	7	1	1	3	2	1			3	
5	7	8	6	1	1	1	1		1		

*No Response

Table III
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Oberlin College - Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1				1	4	7	1				1
2					13						1
3		5	3		4	1					1
4		2	11								1
5		7		6							1
6		3	2	3	4	1					1
Part II											
1		12		1							1
2				2	1	3			6	1	1
3		3	10								1
4		13									1
5					3	2	1	5	2		1
6		2	3	8							1
7		2	11								1
Part III											
1		10	3								1
2		8	5								1
3		1	12								1
4		9	2	2							1
5		2	3	8							1
6			4	8	1						1
Part IV											
1		7	2								1
2		3									1
3		2		1							1
4	7	5	1								1
5	10	2			1						1
6		7	6								1
7	1	7	3	2							1
8		3	7	3							1
Part V											
1		4	9								1
2		4	1	1	6	1					1
3	4		1	5	3						1
4	4	1	6	2							1

*No Response

Table III (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Oberlin College - Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	N.R.*
Part V (Cont'd)											
Ques. 5		13									1
6		6	3	1	2	1					1
7	11	1	1								1
8		12	1								1
9	8	3	1								2
10		4	9								1
Part VI											
1				2	9	2					1
2		2	9	2							1
3		4	6	3							1
4		1	4	6	2						1
5	3	6	3					1			1
6	9	4									1
7	11	2									1
Part VII											
1	13										1
2	7	5					1				1
3	3	4	2	1	1	1	1				1
4	4	1	3	3	1					1	1
5	1	5	2	3	1					1	1

*No Response

Table IV
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

University of Wisconsin - Control Students

Question Number	Number of Items in Question									
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1			1		7	21					
2					29						
3		8	5	7	1	8					
4		3	26								
5		13	4	9	1	2					
6		3	5	6	6	4	5				
Part II											
1		24	1			2	2				
2		3	2	5	2	7		5	5		
3		4	17	4	4						
4		25		1		3					
5		1	2	6	5	3	6	6			
6		2	3	22	1						1
7		2	18	5	4						
Part III											
1		17	12								
2		24	4								1
3		9	20								
4		20	5	4							
5		15	4	9	1						
6			7	19	3						
Part IV											
1		14									15
2		7									22
3		4									25
4	19	9	1								
5	20				9						
6		26	3								
7	1	12	7	8	1						
8		1	24	4							
Part V											
1		4	25								
2		4	4	7	9	4	1				
3	4	5	6	7	7						
4	4	10	14	1							

*No Response

Table IV (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW UP QUESTIONNAIRE

University of Wisconsin - Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		11	4	7	6	1					
6		6	3	5	6	9					
7	23	5									1
8		26	2								1
9	[illegible]	4									
10		6	14	6	3						
Part VI											
1		2	8	6	6	2	3	1			1
2		4	22	2							1
3		6	14	4	5						
4		1	5	13	4	5	1				
5	3	16	5	2	2			1			
6	24	2					2	1			
7	17	9				1	1				1
Part VII											
1	28	1									
2	19	5	2				2				1
3	13	6	5	2	1		2				
4	15	4	1	2	3			1		2	
5	5	6	8	3	3	1	1		1	[illegible]	

*No Response

Table V
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Yale University - Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1					15	18	2				
2					35						
3		14	1	4	7	9					
4		11	21								
5		12	7	12	4						3
6			7	4	3	2	19				
Part II											
1		31	1			3					
2		1		2	2	8	1	10	11		
3		2	25	2		5	1				
4		35									
5					8	2	13	7	4	1	
6		6	3	25	1						
7			28	2	5						
Part III											
1		21	14								
2		29	6								
3		13	22								
4		28	2	5							
5		18	7	9	1						
6		2	4	10	19						
Part IV											
1		15	3	1							[illegible]
2		2									[illegible]
3		6	2	1							26
4	[illegible]	4	1	1							
5	22	1			11						1
6		30	5								
7	6	14	8	5	2						
8		6	21	8							
Part V											
1		10	25								
2		10	9	4	10	2					
3	10		4	15	5	1					
4	10	7	15	2							

*No Response

Table V (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Yale University - Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		18	1	8	8						
6		9	3	3	3	16					1
7	30	1	2	2							
8		33	2								
9	34	1									
10		4	23	2	5	1					
Part VI											
1		5	9	7	2	4	2	2	1	3	
2		6	19	6	3						1
3		11	17	7							
4		5	5	6	7	7	5				
5	1	16	8	5			2	3			
6	21	4	1	2	2	1	4				
7	14	9	2	3		2	3	2			2
Part VII											
1	34	1									
2	22	6	5	1	1						
3	13	8	7	7							
4	26	5	1	1			1			1	
5	5	12	8	5	2		3				

*No Response

Table VI
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Total Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1			1	5	49	61	4				1
2				3	117						1
3		33	15	16	14	42					1
4		20	97								4
5		41	17	41	16	4	1				1
6		9	22	22	24	10	33				1
Part II											
1		94	2	1		10	12	1			1
2		8	5	19	9	26	2	20	30	1	1
3		16	64	11	20	8	1				1
4		104		1		12	2	1			1
5		3	6	14	28	11	26	22	9	1	
6		19	18	79	3						[illegible]
7		7	71	14	25	3					[illegible]
Part III											
1		82	38								[illegible]
2		95	24								[illegible]
3		41	79								
4		89	13	18							
5		57	19	41	3						
6		2	24	60	34						
Part IV											
1		54	6	1							[illegible]
2		21	1	2							
3		16	3	2							1
4	82	30	5	3							1
5	78	6	2	1	32						[illegible]
6		90	30								1
7	8	46	35	20	10						[illegible]
8		14	85	20							2
Part V											
1		27	91		1	1					1
2		27	20	26	22	13	5				1
3	26	9	16	41	24	2					1
4	28	32	49	10							1

*No Response

Table VI (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Total Control Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	[illegible]
Part V (Cont'd)											
Ques. 5		61	8	22	27	1					2
6		30	12	10	12	55					2
7	97	15	5	2							2
8		109	10								2
9	109	8	2								2
10		27	55	13	21	4					1
Part VI											
1		13	30	36	16	8	5	7	1	3	2
2		27	68	18	5						[illegible]
3		35	56	21	8						1
4		10	19	39	22	19	11				1
5	10	63	23	13	2		4	4			
6	92	11	3	3	3	1	6	1			1
7	71	29	3	4		4	4	2			
Part VII											
1	117	3									
2	74	22	9	5	3		6				
3	41	34	23	13	3	2	4				
4	58	20	8	11	8	2	2	2		[illegible]	
5	25	35	28	13	7	3	5		[illegible]	[illegible]	[illegible]

*No Response

Table VII
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

University of Chicago - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1		1	6	17							
2			16	7	1						
3		7	1	4	1	11					
4		2	22								
5		5	6	6	5	2					
6		1	6	5	4	1	7				
Part II											
1		17				3	3	1			
2		1		2	3	6	1	1	10		
3		5	6		12		1				
4		20					3	1			
5		1		3	5	5	4	5	1		
6		7	2	15							
7		3	8		12		1				
Part III											
1		13	11								
2		17	7								
3		16	8								
4		14	1	9							
5		17		6	1						
6		1	2	11	10						
Part IV											
1		14	2	1						7	
2		5		2						17	
3		4	2	1						17	
4	19	5									
5	19	1	2		2						
6		12	12								
7	1	9	7	5	2						
8			20	4							
Part V											
1		8	16								
2		8	6	3	4	2	1				
3	8	2	1	6	4	1	2				
4	8	3	9	2	2						

*No Response

Table VII (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

University of Chicago - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		7	1	5	10						1
6		6	5	1		11					1
7	20	2		1			1				
8		22	2								
9	24										
10		11	4		8	1					
Part VI											
1		4	5	10	3			1			1
2		5	9	8	2						
3		12	9	3							
4		1	9	5	4	2	3				
5	3	17	2	1				1			
6	21	1	1	1							
7	14	8		1			1				
Part VII											
1	23	1									
2	15	2	2			1	4				
3	5	9	7		1		2				
4	12	1	3	1	2	1	1			3	
5	6	7	5	2		1	2	1			

*No Response

Table VIII
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Columbia University - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1			5	32							
2			2	21	14						
3		7	2	2	2	24					
4		7	30								
5		8	4	10	12	2	1				
6		3	9	6	5	6	8				
Part II											
1		22				8	7				
2		2		1	11	6	3	5	9		
3		2	7	3	23	2					
4		27		1		5	4				
5		1	2	4	11	5	7	3	4		
6		11	5	20	1						
7		1	5	5	24	2					
Part III											
1		20	17								
2		33	4								
3		18	19								
4		28	8	1							
5		24	7	5	1						
6			3	19	15						
Part IV											
1		13		1							23
2		9	2	2							[illegible]
3		12	1	1							23
4	18	10	7	2							
5	29	2		1	5						
6		14	23								
7	4	14	13	4	2						
8		5	27	5							
Part V											
1		14	23								
2		14	11	7	4	1					
3	14	1	6	10	4		2				
4	14	9	9	4	1						

*No Response

Table VIII (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Columbia University - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		7	4	9	16						1
6		3	3	1	6	24					
7	34	2	1								
8		34	2								1
9	36	1									
10		12	3	3	17	2					
Part VI											
1		1	5	20	3		5			3	
2		4	24	3	6						
3		9	18	6	3						1
4		7	6	12	5	5	1				1
5	7	23	5					1			1
6	34			1			1				1
7	21	12	2		1						1
Part VII											
1	33	4									
2	18	7	2	4	2	1	3				
3	7	19	5	2	2	1	1				
4	8	5	9	6	2	1	2			4	
5	6	11	6	5	5	1	2	1			

*No Response

Table IX
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Oberlin College - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1			1	8							
2			7	2							
3		3	1	2	1	2					
4		4	5								
5		6		1	2						
6			2	3	1	1	2				
Part II											
1		8					1				
2								3	6		
3		2	4	2	1						
4		9									
5					1	1	3	2	2		
6		2	2	5							
7		3	4	1	1						
Part III											
1		3	6								
2		7	2								
3		5	3								1
4		3	1	5							
5		6	1	2							
6			1	6	2						
Part IV											
1		4		1							4
2		1		1							7
3		3									6
4	6	2	1								
5	5	2			2						
6		4	5								
7	2	1	4	1	1						
8		1	8								
Part V											
1		2	6				1				
2		2	4	1	2						
3	2	1	1	5							
4	2	4	3								

*No Response

Table IX (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Oberlin College - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		2		4	3						
6		1		3	3	2					
7	8		1								
8		7	1								1
9	9										
10		6	2	1							
Part VI											
1		1	4	3	1						
2			6	1	2						
3		4	4								1
4		1	2	4	1		1				
5	1	7	1								
6	9										
7	7	1									1
Part VII											
1	9										
2	7			1			1				
3	2	3		2	2						
4	1	2	2	2	1						1
5	2	3		1	1	2					

*No Response

Table X
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

University of Wisconsin - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1			20	23							
2			17	24	2						
3		9		5	11	18					
4		3	40								
5		5	7	14	11	3	2				1
6		5	8	11	8	2	8				1
Part II											
1		34		1		3	5				
2		5	1	4	4	3	4	3	19		
3		4	14	1	22	1	1				
4		34				5	4				
5		1	3		7	9	10	9	4		
6		13	5	23	2						
7		2	14	2	23	1	1				
Part III											
1		26	17								
2		35	8								
3		31	12								
4		30	6	7							
5		20	8	8	7						
6			7	23	10	3					
Part IV											
1		22	3	1							17
2		12		1							30
3		12		2							29
4	30	8	2	3							
5	31	9	1		1						1
6		23	20								
7	5	16	11	8	3						
8		4	32	7							
Part V											
1		7	34		2						
2		9	14	13	14		3				
3	7	3	4	15	10	3	1				
4	7	7	19	5	2	2	1				

*No Response

Table X (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

University of Wisconsin - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		16	4	12	10	1					
6		7	8	4	5	19					
7	39	2	2								
8		42	1								
9	42	1									
10		18	8	2	14	1					
Part VI											
1		5	7	17	9			1	1	2	1
2		6	27	8	2						
3		15	20	6	2						
4		7	7	13	7	3	4				2
5	7	25	6	3							1
6	36	5	1								1
7	19	15	6	1				1			1
Part VII											
1	42	1									
2	25	6	6	2	2		2				
3	12	13	8	5	2	2	1				
4	11	8	7	4	4	3	1			5	
5	10	8	7	8	4	4	1			1	

*No Response

Table XI
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Yale University - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1			9	22							
2			11	16	4						
3		15	4	5	4	3					
4		6	25								
5		8	6	12	3	1	1				
6			2	10	3	7	9				
Part II											
1		24	1	2		2	2				
2				1	1	6	2	4	17		
3		4	18	4	4						1
4		28				2	1				
5					9	5	5	5	[illegible]		
6		6	3	22							
7		2	18	6	3	1					1
Part III											
1		23	8								
2		29	2								
3		15	16								
4		22	5	4							
5		15	8	7	1						
6			3	24	3						1
Part IV											
1		15	3	1							12
2		3	3								25
3		8	2								21
4	21	9	1								
5	24	3			4						
6		17	14								
7		17	11	2	1						
8		1	25	5							
Part V											
1		8	22			1					
2		8	11	4	5	3					
3	8	1	1	13	5	1	2				
4	8	3	15	3	1	1					

*No Response

Table XI (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Yale University - Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		18	3	4	6						
6		9	2	3	4	13					
7	23	4	2	2							
8		27	4								
9	25	1	2	3							
10		12	9	6	2	1					1
Part VI											
1		3	12	11	4					1	
2		2	22	2	4						1
3		14	13	4							
4		3	2	12	6	5	3				
5	3	19	16	2				1			
6	25	4					1	1			
7	11	14	5	1							
Part VII											
1	31										
2	17	5	3	3	2	1					
3	5	8	11	6	1						
4	9	3	3	4	1	2	1			7	1
5	5	4	4	7	3	3	2	1		2	

*No Response

Table XII
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW-UP QUESTIONNAIRE

Total Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part I											
Ques. 1		1	41	102							
2			53	70	21						
3		41	8	18	19	58					
4		22	122								
5		32	23	43	33	8	4				1
6		9	27	35	21	17	34				1
Part II											
1		105	1	3		16	18	1			
2		8	1	8	19	21	10	16	6		
3		17	49	10	62	3	2				1
4		118		1		12	12	1			
5		3	5	7	33	25	29	24			
6		39	17	85	3						
7		11	49	14	63	4	2				1
Part III											
1		85	59								
2		121	23								
3		85	58								1
4		97	21	26							
5		82	24	28	10						
6		1	16	83	40	3					1
Part IV											
1		68	8	5							63
2		30	5	6							103
3		39	5	4							96
4	94	34	11	5							
5	108	17	3	1	14						1
6		70	74								
7	12	57	46	20	9						
8		11	112	21							
Part V											
1		39	101		2	1	1				
2		41	46	28	19	6	4				
3	39	8	13	49	23	5	7				
4	39	26	55	14	6	3	1				

*No Response

Table XII (Continued)
SUMMARY OF RESPONSES
EARLY ADMISSION FOLLOW UP QUESTIONNAIRE

Total Experimental Students

Question Number	Number of Items in Question										
	0	1	2	3	4	5	6	7	8	9	NR*
Part V (Cont'd)											
Ques. 5		50	12	34	45	1					2
6		26	18	12	18	69					1
7	124	10	6	3							
8		132	10								2
9	136	3	2	3							
10		59	26	12	41	5					
Part VI											
1		14	33	61	20		5	2	1	6	1
2		17	88	22	16						1
3		54	64	19	5						2
4		19	26	46	23	15	12				3
5	21	91	30	6				4			2
6	125	10	2	2			2	1			2
7	72	50	13	3	1		1	1			3
Part VII											
1	138	6									
2	82	20	13	10	6	3	10				
3	31	52	31	15	8	3	4				
4	41	19	24	17	10	7	5			19	2
5	29	33	22	23	13	11	7	3		3	

*No Response

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ABSTRACT

In 1951, 420 students of high academic promise at the end of the tenth grade entered eleven colleges and universities as freshmen. The students were part of Early Admission Program financed by the Fund for the Advancement of Education of the Ford Foundation between 1951 and 1958. The follow-up study, begun in 1962, of five of the twelve colleges and universities in the Program, traced the young men who, in 1951, had entered Columbia, Chicago, Oberlin, Wisconsin, and Yale.

Data for the follow-up study came from three sources— Questionnaires used in 1953 and in 1955, academic transcripts, and the follow-up questionnaire.

In 1951, 240 experimental students and 252 control students had attended the five colleges and universities in the follow-up study. Of these students, 213 of the experimental group and 197 of the control group were men.

Approximately 65% of both groups responded to the follow-up questionnaire.

Five null hypotheses were identified and tested, with extensive use of Chi-squares.

The general conclusion which evolved from the pattern of the rejections of the null hypothesis was that experimental group had accelerated the development of careers with minimum observable ill-effects both during and after college.